

“Play It Safe”

A health and safety campaign designed for California Fairs to educate fair staff, animal exhibitors and the public about animal-borne diseases, how they are transmitted, and the precautions to take to when visiting animal areas at the fair.

Completed by: Ashley Rupp



A Health and Safety Campaign for Fairs

This Play It Safe Campaign was produced in partnership with the California Department of Food and Agriculture's Division of Fairs and Expositions, Western Fairs Association and the California Fair Services Authority.



An animal exhibitor takes a break from grooming her dairy cow to snack on a finger-licking good cinnamon roll. A fair visitor wipes his hands and then his mouth with his lunch napkin as he talks about the baby alligator he just held. And over in the fair office, a volunteer cuddles a baby chick while sampling caramel apple slices dropped off by a vendor. It's another fun day at the fair! Unfortunately, along with some great memories, these people could also be taking home a much more unpleasant souvenir – a disease-causing virus, bacterium or other microorganism picked up from the animals they just interacted with – something that could have easily been prevented had they simply washed their hands before eating or touching their mouths.

This is where the *Play It Safe* campaign comes in. Inside this workbook, you'll find a comprehensive outreach program designed to help you educate yourself, your staff, animal exhibitors and the public about animal-borne diseases, how they are transmitted, and the precautions your fair can take to ensure everyone goes home healthy and happy. Most of all, we hope that everyone you share this information with will take it upon themselves to "pass it on" to *their* colleagues, friends, family and the animal-lovers they encounter at the fair.

Inside the workbook you will find:

- Resources, checklists and policy templates
- Hand-washing station info and requirements
- An entertaining, informative DVD to duplicate and share with your community's 4-H, FFA and Grange exhibitors
- A flash drive containing 10 Play It Safe signs to print and post, a Play It Safe brochure to hand out to animal exhibitors and the public, and a sample health and safety policy

Prevention of animal-borne diseases is a serious matter. These diseases can cause life-long health issues and even death. By working together, we can help ensure the safety of everyone attending our fairs (and show that we care about their safety) as well as ensure the future of animal events and exhibitions at our fairs.

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California Fair Services Authority

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Western Fairs Association

NO. 1

Introduction

NO. 2

The Compendium

NO. 3

Sample Health and Safety Policy

NO. 4

Your Health and Safety Policy

NO. 5

Hand-Washing Station

NO. 6

Educational Materials and Signs

NO. 7

Logs

NO. 8

Other Suggestions

Introduction

The following section is an introduction to the Play It Safe Health and Safety Campaign. Our goal is to make implementation as easy as possible. Use the following materials and simple steps to put this campaign into use on your fairgrounds.

Included in this section

1. Step-By-Step Check List
2. Resources – Pathogens
3. Example Press Release

Take Action

Step 1:

- ☐ Remove the bright green Step-By-Step Check List and use it as a guideline to implement this campaign.

Step 2:

- ☐ Read the Resources-Pathogens to understand why this campaign is important.

Step 3:

- ☐ Create your own press release to inform the public of your new policy and procedures.

Step-By-Step

Follow these simple steps to successfully complete the Play It Safe campaign.

Step 1:

Review the entire tool kit and share it with your board members and staff.

- ☐ Show the *Play It Safe* DVD located on the disk in section 6 to your board members and staff.
- ☐ Hand out a copy of the *Play It Safe* brochure in section 6 to your board members and staff.
- ☐ Read the *Why This Information Is Important* located in section 1.

Step 2:

Make sure you are fully informed.

- ☐ Read the *Compendium of Measures to Prevent Disease Associated with Animals in Public Settings, 2011* located in section 2.

Step 3:

Create your own Health and Safety Policy.

- ☐ Review the *Sample Health and Safety Policy* located in section 3
- ☐ Using the *Your Health and Safety Policy* template located on the flash drive in section 6, fill in your fair's information.
- ☐ Using a map of your facilities, mark all animal contact areas, including animal housing, animal traffic (load in/out) areas and any contractors with animals.
- ☐ Place completed *Health and Safety Policy* in section 4, with your completed animal contact map.

Step 4:

Review hand-washing station information located in section 5 of this binder.

- ☐ Hand-Washing station inventory: using the facilities map with the labeled animal housing and traffic areas from step 3, assess the quantity of hand-washing stations needed.
- ☐ Build, borrow or buy hand-washing stations as necessary for your fair.
- ☐ Using a map of your facilities, mark where all hand-washing stations and restrooms are located and insert a copy into the clear sheet protector in section 5 of this binder.

Step 5:

Review the educational materials and signs in section 6.

Resources - Pathogens

Why This Campaign Is Important

The presence of these pathogens can cause illness, life-long ailments and even death. It is the fairs' responsibility to educate and protect the public and fair employees.

Pathogens:

Any disease-producing agent, especially a virus, bacterium or other microorganism.

- **E. coli O157:H7**
- Salmonella
- Campylobacter
- Cryptosporidium

How Do You Get Enteric (Intestinal) Pathogens?

- Eating contaminated food
- Drinking contaminated liquid
- Touching hands on contaminated surfaces then eating or drinking before washing your hands

E. coli O157:H7

Escherichia coli O157:H7 (*E. coli* O157:H7) is one of hundreds of strains of the bacterium *Escherichia coli* (*E. coli*). Although *E. coli* of many types live in the intestines of healthy humans and animals, this particular strain produces a powerful toxin and can cause severe illness. *E. coli* O157:H7 infection causes abdominal cramps and diarrhea, which is sometimes bloody. There is little or no fever present, and the acute illness is generally gone in five to 10 days.

In children under five years of age and the elderly, the infection can cause a complication called hemolytic uremic syndrome, in which the red blood cells are destroyed and the kidneys fail. About two percent to seven percent of infections lead to this complication (Department of Health Services Division of Communicable Disease Control).

Salmonella

Salmonellosis is an infection with bacteria called *Salmonella*. For more than 100 years, *Salmonella* germs have been known to cause illness. They were discovered by an American scientist named Salmon, for whom they are named.

Most persons infected with *Salmonella* develop diarrhea, fever, and abdominal cramps 12 to 72 hours after infection. The illness usually lasts four to seven days, and most persons recover without treatment. However, in some persons, the diarrhea may be so severe that he/she needs to be hospitalized. In these

patients, the *Salmonella* infection may spread from the intestines to the blood stream, and then to other body sites and can cause death unless the person is treated promptly with antibiotics. The elderly, infants, and people with impaired immune systems are more likely to have a severe illness (Centers for Disease Control and Prevention).

Campylobacter

Campylobacteriosis is an infectious disease caused by bacteria of the genus *Campylobacter*. Most people who become ill with campylobacteriosis get diarrhea, cramping, abdominal pain, and fever within two to five days after exposure to the organism. The diarrhea may be bloody and can be accompanied by nausea and vomiting. The illness typically lasts one week. Some infected persons do not have any symptoms. In persons with compromised immune systems, *Campylobacter* occasionally spreads to the bloodstream and causes a serious life-threatening infection (Centers for Disease Control and Prevention).

Cryptosporidium

Cryptosporidium is a microscopic parasite that causes the diarrheal disease cryptosporidiosis. Both the parasite and the disease are commonly known as "Crypto."

There are many species of *Cryptosporidium* that infect humans and animals. The parasite is protected by an outer shell that allows it to survive outside the body for long periods of time and makes it very tolerant to chlorine disinfection.

While this parasite can be spread in several different ways, water (drinking water and recreational water) is the most common method of transmission.

Cryptosporidium is one of the most frequent causes of waterborne disease among humans in the United States (Centers for Disease Control and Prevention).

How Can You Reduce Your Risk From These Pathogens?

- After contact with animals wash your hands thoroughly with running water and soap.
- Be particularly careful with foods prepared for infants, the elderly, and the immune-compromised.
- Wash hands with soap after handling reptiles, birds, or baby chicks, and after contact with pet feces.
- Make sure drainage systems in animal areas work properly.
- Keep animal areas clean.

EXAMPLE

Press Release

(Your Fair Logo Here)

FOR IMMEDIATE RELEASE

Media Contact: *(Your contact)*
(Your contact information)

***(Your Fair Name Here)* Takes Proactive Measures to Ensure Public Health and Safety to Prevent Disease Associated with Animals in Public Settings**

(Your Fair's City, California) – ***(Your Fair Name Here)*** addresses the growing concern about the possible infections from pathogenic bacteria such as E. coli and Salmonella through its extensive and continued internal operational procedures, as well as external outreach, to provide a healthy and safe environment for fair patrons to enjoy.

The fair implements precautionary tactics based on recommendations outlined in the *Compendium of Measures to Prevent Disease Associated with Animals in Public Settings, 2011*, which is published by the National Association of State Public Health Veterinarians, Inc., to assist animal venue operators, exhibitors, veterinarians and various public health agencies by providing recommendations to minimize the potential for risks that may be associated with animals in public settings. In addition to said precautions, to further their education on these subjects, fair management attends annual workshops provided by a variety of local organizations, such as ***(Your County Name Here)*** County Department of Public Health.

During the ***(# of days your fair runs)***-day ***(Your Fair Name Here)*** event, nearly ***(estimate of the number of patrons who will visit your fair)*** people will visit the fairgrounds. Their health and safety, as well as that of fair employees, is of paramount importance to the entire fair family. It is important to understand that ***(Your Fair Name Here)*** is constantly evolving and improving in regards to its health and safety programs. However, at the core of all efforts are the common principles of providing **information and opportunity** for fair patrons. In all areas pertaining to health and safety, including carnival rides, food stations and animal areas, the fair adheres to the principles of providing education through information, and the opportunity for good personal hygiene and teaching through demonstration. Some examples include:

- **Information:** Signage (in English and Spanish) ***(Add additional languages if needed)***.
- **Opportunity:** Information leads to action and the fair encourages action through the opportunity to practice good personal hygiene. The most effective way to enhance the health and safety of visitors is to provide them

with the opportunity to wash their hands. To this end, *(Your Fair Name Here)* has provided *(number of)* hand-washing stations and hand-sanitizing stations, in addition to public restrooms, throughout the fairgrounds.

(Your Fair Name Here) embraces these core principles in everything we do in regard to enhancing the health and safety of visitors and employees.

###

Compendium of Measures to Prevent Disease Associated with Animals in Public Settings, 2011

National Association of State Public Health Veterinarians, Inc.



Continuing Education Examination available at <http://www.cdc.gov/mmwr/cme/conted.html>



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

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On the Cover: *Top left:* Girl and a sheep at a petting zoo (Photo/Champlain Valley Exposition, Essex Junction, Vermont). *Top right:* Brushing a pig at a petting zoo (Photo/C. Barton Behravesh, CDC). *Bottom right:* Boy and a calf at an animal exhibit in Minnesota (Photo/J. Springfield, V. A. Medical Center, Minneapolis, Minnesota). *Bottom left:* People looking at hatchling chicks at a chick exhibit (Photo/M. Calico, International Association of Fairs and Expositions). *Center:* Hand washing after animal contact (Photo/J. Smith).

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Compendium of Measures to Prevent Disease Associated with Animals in Public Settings, 2011

National Association of State Public Health Veterinarians, Inc. (NASPHV)

Prepared by
NASPHV

Summary

Certain venues encourage or permit the public to be in contact with animals, resulting in millions of human-animal interactions each year. These settings include county or state fairs, petting zoos, animal swap meets, pet stores, feed stores, zoologic institutions, circuses, carnivals, educational farms, livestock-birthing exhibits, educational exhibits at schools and child-care facilities, and wildlife photo opportunities. Although human-animal contact has many benefits, human health problems are associated with these settings, including infectious diseases, exposure to rabies, and injuries. Infectious disease outbreaks have been caused by Escherichia coli O157:H7, Salmonella species, Cryptosporidium species, Coxiella burnetii, Mycobacterium tuberculosis, ringworm, and other pathogens. Such outbreaks have substantial medical, public health, legal, and economic effects.

This report provides recommendations for public health officials, veterinarians, animal venue staff members, animal exhibitors, visitors to animal venues, physicians, and others concerned with minimizing risks associated with animals in public settings. The recommendation to wash hands is the most important for reducing the risk for disease transmission associated with animals in public settings. Other important recommendations are that venues prohibit food in animal areas and include transition areas between animal areas and nonanimal areas, visitors receive information about disease risk and prevention procedures, and animals be properly cared for and managed. These updated 2011 guidelines provide new information on the risks associated with amphibians and with animals in day camp settings, as well as the protective role of zoonotic disease education.

Introduction

Contact with animals in public settings (e.g., fairs, educational farms, petting zoos, and schools) provides opportunities for entertainment and education. The National Association of State Public Health Veterinarians (NASPHV) understands the positive benefits of human-animal contact. However, an inadequate understanding of disease transmission and animal behavior can increase the likelihood of infectious diseases, rabies exposures, injuries, and other health problems among visitors, especially children, in these settings. Zoonotic diseases (i.e., zoonoses) are diseases transmitted between animals and humans. Of particular concern are instances in which zoonoses result in numerous persons becoming ill. During 1991–2005, the number of enteric disease outbreaks associated with animals

in public settings increased (1). During 1996–2010, approximately 150 human infectious disease outbreaks involving animals in public settings have been reported to CDC (CDC, unpublished data, 2010).

Although eliminating all risk from animal contacts is not possible, this report provides recommendations for minimizing associated disease and injury. NASPHV recommends that local and state public health, agricultural, environmental, and wildlife agencies use these recommendations to establish their own guidelines or regulations for reducing the risk for disease from human-animal contact in public settings. Public contact with animals is permitted in numerous types of venues (e.g., animal displays, petting zoos, animal swap meets, pet stores, feed stores, zoological institutions, nature parks, circuses, carnivals, educational farms, livestock-birthing exhibits, county or state fairs, child-care facilities or schools, and wildlife photo opportunities). Managers of these venues should use the information in this report in consultation with veterinarians, public health officials, or other professionals to reduce risks for disease transmission.

Guidelines to reduce risk for disease from animals in health-care and veterinary facilities and from service animals (e.g., guide dogs) have been developed (2–6). Although not specifically addressed here, the general principles and recommendations in this report are applicable to these settings.

This report has been endorsed by CDC, the Council of State and Territorial Epidemiologists, the United States Department of Agriculture-Animal Plant Health Inspection Service, the American Association of Extension Veterinarians, and the American Veterinary Medical Association.

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Methods

NASPHV periodically updates the recommendations to prevent disease associated with animals in public settings. The revision includes reviewing recent literature; updating reported outbreaks, diseases, or injuries attributed to human-animal interactions in public settings; and soliciting input from NASPHV members and the public. During September 15–17, 2010, NASPHV members and external expert consultants met at CDC in Atlanta, Georgia. A committee consensus was required to add or modify existing language or recommendations. The 2011 guidelines have been updated with recently reported information about zoonotic disease outbreaks and prevention measures. This includes more information on indirect transmission through contact with animal environments and contaminated objects and unique challenges associated with intensive animal contact venues like farm day camps. In addition, the guidelines describe the importance of previous knowledge about disease risk in preventing illness. New or expanded disease topics include salmonellosis associated with amphibians and zoonotic influenza.

Enteric (Intestinal) Diseases

Infections with enteric bacteria and parasites pose the highest risk for human disease from animals in public settings (7). Healthy animals can harbor human enteric pathogens, many of which have a low infectious dose (8–10). Enteric disease outbreaks among visitors to fairs, farms, petting zoos, and other public settings are well documented. Many pathogens have been responsible for outbreaks, including *Escherichia coli* O157:H7 and other Shiga toxin-producing *E. coli* (STEC), *Salmonella enterica*, *Cryptosporidium* species, and *Campylobacter* species (11–24). Although reports often document cattle, sheep, or goats (1,13,14) as sources for infection, live poultry (25), rodents (26), reptiles (19), amphibians (27), and other domestic and wild animals also are potential sources.

The primary mode of transmission for enteric pathogens is fecal-oral. Because animal fur, hair, skin, and saliva (28) harbor fecal organisms, transmission can occur when persons pet, touch, feed, or are licked by animals. Transmission also has been associated with contaminated animal bedding, flooring, barriers, other environmental surfaces, and contaminated clothing and shoes (12,17,19,29–32). In addition, illness has resulted from fecal contamination of food (33), including raw milk (34–37), and drinking water (38–40).

Removing ill animals, especially those with diarrhea, is necessary but not sufficient to protect animal and human health. Animals carrying human enteric pathogens frequently exhibit no signs of illness but can still shed the organisms,

thereby contaminating the environment (41). Some pathogens are shed by animals intermittently and live for months or years in the environment (42–46). Intermittent shedding of pathogens and limitations of laboratory testing make attempts to identify and remove infected animals unreliable as a means of eliminating the risk for transmission. Antimicrobial treatment of animals also cannot reliably eliminate infection, prevent shedding, or protect against reinfection. In addition, treatment of animals can prolong shedding and contribute to antimicrobial resistance (47).

Multiple factors increase the probability of disease transmission at animal exhibits. Animals are more likely to shed pathogens because of stress induced by prolonged transportation, confinement, crowding, and increased handling (48–54). Commingling increases the probability that animals shedding pathogens will infect other animals (55). The prevalence of certain enteric pathogens is often higher in young animals (56–58), which are frequently used in petting zoos and educational programs for children. Shedding of STEC and *Salmonella* organisms is highest in the summer and fall, when substantial numbers of traveling animal exhibits, agricultural fairs, and petting zoos are scheduled (53,58,59).

The risk for human infection is increased by certain factors and behaviors, especially in children. These factors and behaviors include lack of awareness of the risk for disease, inadequate hand washing, lack of close supervision, and hand-to-mouth activities (e.g., use of pacifiers, thumb-sucking, and eating) (60). Children are particularly attracted to animal venues but have increased risk for serious illness when they are infected. Although farm residents might have some acquired immunity to certain pathogens (61,62), livestock exhibitors have become infected with *E. coli* O157:H7 in fair outbreaks (17; K. Smith, DVM, Minnesota Department of Health, personal communication, 2010).

The layout and maintenance of facilities and animal exhibits can increase or decrease the risk for infection (63). Factors that increase risk include inadequate hand-washing facilities (64), inappropriate flow of visitors, and incomplete separation between animal exhibits and food preparation and consumption areas (12,16,65). Other factors include structural deficiencies associated with temporary food-service facilities, contaminated or inadequately maintained drinking water systems, and poorly managed sewage- or manure-disposal (19,32,38–40).

Outbreaks and Lessons Learned

In 2000, two *E. coli* O157:H7 outbreaks in Pennsylvania and Washington prompted CDC to establish recommendations for enteric disease prevention associated with farm animal contact. Risk factors identified in both outbreaks were direct

animal contact and inadequate hand washing (15,66). In the Pennsylvania outbreak, 51 persons (median age: 4 years) became ill within 10 days after visiting a dairy farm. Eight (16%) of these patients acquired hemolytic uremic syndrome (HUS), a potentially fatal complication of STEC infection which involves kidney failure. The same strain of *E. coli* O157:H7 was isolated from cattle, patients, and the farm environment. An assessment of the farm determined that no areas separate from the animal contact areas existed for eating and drinking, and the hand-washing facilities were poorly maintained and not configured for children (15).

The protective effect of hand washing and the persistence of organisms in the environment were demonstrated in an outbreak of *Salmonella enterica* serotype Enteritidis infections at a Colorado zoo in 1996. A total of 65 cases (primarily among children) were associated with touching a wooden barrier around a temporary Komodo dragon exhibit. Children who were not ill were significantly more likely to have washed their hands after visiting the exhibit. *Salmonella enterica* serotype Enteritidis was isolated from 39 patients, a Komodo dragon, and the wooden barrier (19).

In 2005, an *E. coli* O157:H7 outbreak among 63 patients, including seven who developed HUS, was associated with multiple fairs in Florida (13). Both direct animal contact and contact with sawdust or shavings were associated with illness. Persons who reported feeding animals were more likely to become ill. Persons were less likely to become ill if they reported washing their hands before eating or drinking. Among persons who washed their hands with soap and water, creating lather decreased the likelihood of illness, illustrating the value of thorough hand washing. Drying hands on clothing increased the likelihood of illness (67).

During 2000–2001 at a Minnesota children's farm day camp, washing hands with soap after touching a calf and washing hands before going home decreased the likelihood for illness in two outbreaks involving multiple enteric pathogens (22). Implicated pathogens for the 84 human infections were *E. coli* O157:H7, *Cryptosporidium parvum*, non-O157 STEC, *Salmonella enterica* serotype Typhimurium, and *Campylobacter jejuni*. These pathogens and *Giardia* organisms were isolated from calves. Risk factors for children who became ill included caring for an ill calf and getting visible manure on their hands.

Disease transmission can occur in the absence of direct animal contact if a pathogen is disseminated in the environment. In a 2002 Oregon county fair outbreak, 60 *E. coli* O157:H7 infections occurred, primarily among children (29). Illness was associated with visiting an exhibition hall that housed goats, sheep, pigs, rabbits, and poultry; however, illness was not associated with touching animals or their pens, eating, or inadequate hand washing. *E. coli* O157:H7 was likely

disseminated to environmental surfaces via contaminated dust (29). In 2004, an outbreak of *E. coli* O157:H7 infections was associated with attendance at the North Carolina State Fair goat and sheep petting zoo (14). Health officials identified 108 patients, including 15 who developed HUS. In addition to direct contact with animals, risk factors included manure contact and hand-to-mouth behaviors. Evidence indicated that falling down or sitting on the ground in the petting zoo was associated with illness. The outbreak strain of *E. coli* O157:H7 was isolated from shoes and shavings collected from a stroller in households of petting zoo visitors (14).

Enteric pathogens can contaminate the environment and persist in animal housing areas for long periods. For example, *E. coli* O157:H7 can survive in soil for months (32,42,44,68,69). Prolonged environmental persistence of pathogens was documented in a 2001 Ohio outbreak of *E. coli* O157:H7 infections in which 23 persons became ill at a fair facility after handling sawdust, attending a dance, or eating and drinking in a barn where animals had been exhibited during the previous week (32). Fourteen weeks after the fair, *E. coli* O157:H7 was isolated from multiple environmental sources within the barn, including sawdust on the floor and dust on the rafters. Forty-two weeks after the fair, *E. coli* O157:H7 was again recovered from sawdust on the floor. Environmental persistence of *E. coli* O157:H7 was also described after a 2003 outbreak in which 25 persons acquired *E. coli* O157:H7 at a Texas agricultural fair. The strain isolated from patients also was found in fair environmental samples 46 days after the fair ended (17). In the previously mentioned North Carolina outbreak (14), the outbreak strain of *E. coli* O157:H7 was isolated from animal bedding 10 days after the fair was over and from soil 5 months after the animal bedding and topsoil were removed (14,69).

Improper facility design and inadequate maintenance can increase risk for infection, as illustrated by one of the largest waterborne outbreaks in the United States (39,40). In 1999, approximately 800 suspected cases of *E. coli* O157:H7 and/or *Campylobacter* species infection were identified among attendees at a New York county fair, where unchlorinated water supplied by a shallow well was used by food vendors to make beverages and ice (40).

Temporary animal exhibits are particularly vulnerable to design flaws (13,19). Such exhibits include animal displays or petting zoos added to attract visitors to zoos, festivals, roadside attractions, farm stands, farms where persons can pick their own produce, feed stores, and Christmas tree lots. In 2005, an *E. coli* O157:H7 outbreak in Arizona was associated with a temporary animal contact exhibit at a municipal zoo. A play area for children was immediately adjacent to and downhill from the petting zoo facility. The same strain of

E. coli O157:H7 was found both in children and 12 petting zoo animals. Inadequate hand-washing facilities were reported from a temporary exhibit in British Columbia, Canada where child-care facility and school field trips to a pumpkin patch with a petting zoo resulted in 44 cases of *E. coli* O157:H7 infection (16). The same strain of *E. coli* O157:H7 was found both in children and in a petting zoo goat. Running water and signs recommending hand washing were not available, and alcohol hand sanitizers were at a height that was unreachable for some children. In New York, 163 persons became ill with STEC O111:H8, *Cryptosporidium* species, or both at a farm stand that sold unpasteurized apple cider and had a petting zoo with three calves (70). Stools from two calves were Shiga toxin 1 positive.

Day camps at which children have prolonged close contact with livestock pose a unique challenge with regard to disease prevention. In the previously mentioned Minnesota day camp outbreak (22), disease transmission occurred again even though heightened prevention measures were implemented based on findings from an outbreak investigation at the same camp the year before. Similarly, in 2007, an *E. coli* O157:H7 outbreak occurred at a day camp in Florida where prolonged contact with livestock was encouraged (71).

Recurrent outbreaks have happened because of failure to properly implement disease-prevention recommendations. Following a Minnesota outbreak of cryptosporidiosis with 31 ill students at a school farm program, specific recommendations provided to teachers were inadequately implemented (20), and a subsequent outbreak occurred with 37 illnesses. Hand-washing facilities and procedures were inadequate. Coveralls and boots were dirty, cleaned infrequently, and handled without subsequent hand washing.

Education of visitors to public animal contact venues about the risk for transmission of diseases from animals to humans is a critical disease-prevention measure. Awareness of zoonotic disease risks is protective against illness in outbreaks (14).

Outbreaks also have resulted from contaminated animal products used for school activities. Salmonellosis outbreaks associated with dissection of owl pellets have been documented in Minnesota (72) and Massachusetts (C. Brown, DVM, Massachusetts Department of Public Health, personal communication, 2008). In Minnesota, risk factors for infection included inadequate hand washing, use of food service areas for the activity, and improper cleaning of contact surfaces. Persons in a middle school science class were among those infected in a multistate salmonellosis outbreak associated with frozen rodents purchased to feed snakes from the same Internet supplier (26).

During 2005–2010, several infectious disease outbreaks were caused by contact with animals and animal products

not primarily associated with public settings. However, these outbreaks have implications for animal contact venues. Turtles and other reptiles, amphibians, rodents, and live poultry (e.g., chicks, chickens, ducklings, ducks, turkeys, and geese) are recognized as sources of human *Salmonella* infections (19,25,27,73–83). Since 2006, three large multistate outbreaks have been linked to contact with small turtles, including a fatal case in an infant (79,80,84–86). In addition, 14 multistate outbreaks linked with live poultry originating from mail-order hatcheries have been reported since 2005 (CDC, unpublished data, 2010). Ill persons included those who reported contact with live poultry at feed stores, schools, day cares, fairs, or petting zoos (78). During 2006–2008, a total of 79 human *Salmonella enterica* serotype Schwarzengrund infections were linked to multiple brands of contaminated dry dog and cat food produced at a plant in Pennsylvania (87). Contaminated pig ear treats and pet treats containing beef and seafood also have been associated with *Salmonella* infections (88–91).

Risks from aquatic animals include direct and indirect contact with the animal, tank, water, filtration equipment, or other tank contents. Multidrug-resistant human *Salmonella* infections have been linked to contact with contaminated water from home aquariums containing tropical fish (92,93). A single case of *Plesiomonas shigelloides* infection in a Missouri infant was identified, and the organism was subsequently isolated from a babysitter's aquarium (94). A survey of tropical fish tanks in Missouri found that four (22%) of 18 tanks yielded *P. shigelloides* from three pet stores. During 2009–2011, approximately 200 *Salmonella enterica* serotype Typhimurium infections were linked to contact with African dwarf frogs, an aquatic amphibian, or their tank water or contents (C. Barton Behravesh, CDC, personal communication, 2011). Ill persons included those who reported such contact at carnivals, nursing homes, day cares, pet stores, and other retail stores (27). These findings have implications for risk for infection from aquatic exhibits (e.g., aquariums and aquatic touch tanks).

Sporadic Infections

Case-control studies also have associated sporadic infections (i.e., those not linked to an outbreak) with animals including reptiles and farm animals (82,95). For example, a study of sporadic *E. coli* O157:H7 infections in the United States determined that persons who became ill, especially children, were more likely than persons who did not become ill to have visited a farm with cows (96). Additional studies also documented an association between *E. coli* O157:H7 infection and visiting a farm (97) and living in a rural area (98). Studies of human cryptosporidiosis have documented contact with cattle and visiting farms as risk factors for infection (61,99,100).

Another study identified multiple factors associated with *Campylobacter* infection, including consumption of raw milk and contact with farm animals (101).

Additional Health Concerns

Although enteric diseases are the most commonly reported illnesses associated with animals in public settings, other health risks exist. For example, allergies can be associated with animal dander, scales, fur, feathers, urine, and saliva (102–108). Additional health concerns include injuries, exposure to rabies, and infections other than enteric diseases.

Injuries

Injuries associated with animals are a well-described and important problem. For example, dog bites are a substantial community problem for which specific guidelines have been written (109). Injuries associated with animals in public settings include bites, kicks, falls, scratches, stings, crushing of the hands or feet, and being pinned between the animal and a fixed object. These injuries have been associated with big cats (e.g., tigers), monkeys, and other domestic, wild, and zoo animals. Settings have included public stables, petting zoos, traveling photo opportunities, schools, children's parties, dog parks, and animal rides (M. Eidson, DVM, New York State Department of Health, personal communication, 2003; J.B. Bender, DVM, University of Minnesota, personal communication, 2003; M.T. Jay-Russell, DVM, California Department of Health, personal communication, 2003; G.L. Swinger, DVM, Tennessee Department of Health, personal communication, 2003). For example, a Kansas teenager was killed while posing for a photograph with a tiger being restrained by its handler at an animal sanctuary (110). In Texas, two high school students were bitten by a cottonmouth snake that was used in a science class after being misidentified as a nonvenomous species (W. Garvin, Caldwell Zoo, Texas, personal communication, 2008).

Exposure to Rabies

Persons who have contact with rabid mammals can be exposed to rabies virus through a bite or when mucous membranes or open wounds become contaminated with infected saliva or nervous tissue. Although no human rabies deaths caused by animal contact in public settings have been reported, multiple rabies exposures have occurred, requiring extensive public health investigation and medical follow-up. For example, thousands of persons have received rabies postexposure prophylaxis (PEP) after being exposed to rabid or potentially rabid animals, including bats, raccoons, cats, goats, bears,

sheep, horses, and dogs, at various venues: an urban public park (S. Slavinski, DVM, New York City Department of Health and Mental Hygiene, personal communication, 2010), a pet store in New Hampshire (111), a county fair in New York State (112), petting zoos in Iowa (113,114) and Texas (J.H. Wright, DVM, Texas Department of Health, personal communication, 2004), school and rodeo events in Wyoming (64), a horse show in Tennessee (J.R. Dunn, DVM, Tennessee Department of Health, personal communication, 2010), and summer camps in New York (115). Substantial public health and medical care challenges associated with potential mass rabies exposures include difficulty in identifying and contacting persons potentially at risk, correctly assessing exposure risks, and providing timely medical prophylaxis when indicated. Prompt assessment and treatment are critical to prevent this disease, which is usually fatal.

Other Infections

Multiple bacterial, viral, fungal, and parasitic infections have been associated with animal contact, and the infecting organisms are transmitted through various modes. Infections from animal bites are common and frequently require extensive treatment or hospitalization. Bacterial pathogens associated with animal bites include *Pasteurella* species, *Francisella tularensis* (116), *Staphylococcus* species, *Streptococcus* species, *Capnocytophaga canimorsus*, *Bartonella henselae* (cat-scratch disease), and *Streptobacillus moniliformis* (rat-bite fever). Certain monkey species (especially macaques) that are kept as pets or used in public exhibits can be infected with simian herpes B virus. Infected monkeys are often asymptomatic or have mild oral lesions yet human exposure through monkey bites or bodily fluids can result in fatal meningoencephalitis (117,118).

Skin contact with animals in public settings also is a public health concern. In 1995, a total of 15 cases of ringworm (club lamb fungus) caused by *Trichophyton* species and *Microsporum gypseum* were documented among owners and family members who exhibited lambs in Georgia (119). In 1986, ringworm in 23 persons and multiple animal species was traced to a *Microsporum canis* infection in a hand-reared zoo tiger cub (120). Orf virus infection (i.e., contagious ecthyma or sore mouth in sheep and goats) has occurred after contact with sheep at a public setting (121). Orf virus infection also has been described in goats and sheep at a children's petting zoo (122) and in a lamb used for an Easter photo opportunity (M. Eidson, DVM, New York State Department of Health, personal communication, 2003). Transmission of pox viruses in public settings also has been described. In the 1970s, after handling various species of infected exotic animals, a zoo

attendant experienced an extensive papular skin rash from a cowpox-like virus (123). Cowpox virus transmission from rats to humans was also documented among persons who had purchased the rats as pets or had contact with them at pet stores (124). In 2003, multiple cases of monkeypox occurred among persons who contacted infected prairie dogs either at a child-care center (125,126) or a pet store (J.J. Kazmierczak, DVM, Wisconsin Department of Health and Family Services, personal communication, 2004). Aquatic animals and their environment also have been associated with cutaneous infections (127). For example, *Mycobacterium marinum* infections have been described among persons owning or cleaning fish tanks (128,129).

Ectoparasites and endoparasites pose concerns when humans and exhibit animals interact. *Sarcoptes scabiei* is a skin mite that infests humans and animals, including swine, dogs, cats, foxes, cattle, and coyotes (130,131). Although human infestation from animal sources is usually self-limiting, skin irritation and itching might occur for multiple days and can be difficult to diagnose (131,132). Bites from avian mites have been reported in association with pet gerbils in school settings (133). Fleas from animals that bite humans increase the risk for infection or allergic reaction. In addition, fleas can carry a tapeworm species that can infect children who swallow the flea (134,135). Animal parasites also can infect humans who ingest materials contaminated with animal feces or who ingest or come into contact with contaminated soil. Parasite control through veterinary care and proper husbandry combined with hand washing reduces the risks associated with ectoparasites and endoparasites (136).

Tuberculosis is another disease concern for certain animal settings. In 1996, a total of 12 circus elephant handlers at an exotic animal farm in Illinois were infected with *Mycobacterium tuberculosis*; one handler had signs consistent with active disease after three elephants died of tuberculosis. Medical history and testing of the handlers indicated that the elephants had been a probable source of exposure for most of the human infections (137). During 1989–1991 at a zoo in Louisiana, seven animal handlers who were previously negative for tuberculosis tested positive after a *Mycobacterium bovis* outbreak in rhinoceroses and monkeys (138). Other instances of transmission of mycobacterial species from animals to animal care staff without known transmission to the public have also been documented (139–141). The U.S. Department of Agriculture (USDA) has developed guidelines regarding removal of tuberculosis-infected animals from public settings because of the risk for exposure to the public (142).

Zoonotic pathogens also can be transmitted by direct or indirect contact with reproductive fluids, aborted fetuses, or newborns from infected dams. Live-birthing exhibits, usually

involving livestock (e.g., cattle, pigs, goats, or sheep), are popular at agricultural fairs. Although the public usually does not have direct contact with animals during birthing, newborns and their dams might be available for petting afterward. Q fever (*Coxiella burnetii*), leptospirosis, listeriosis, brucellosis, and chlamydiosis are serious zoonoses that can be acquired through contact with reproductive materials (143).

C. burnetii is a rickettsial organism that most frequently infects cattle, sheep, and goats. The disease can cause abortion in animals, but more frequently the infection is asymptomatic. During birthing, infected animals shed large numbers of organisms, which can become aerosolized. Most persons exposed to *C. burnetii* develop an asymptomatic infection, but clinical illness can range from an acute influenza-like illness to life-threatening endocarditis. A Q fever outbreak involving 95 confirmed cases and 41 hospitalizations was linked to goats and sheep giving birth at petting zoos in indoor shopping malls (144). Indoor-birthing exhibits might pose an increased risk for Q fever transmission because of inadequate ventilation.

Chlamydophila psittaci infections cause respiratory disease and are usually acquired from psittacine birds (145). For example, an outbreak of *C. psittaci* pneumonia occurred among the staff members at Copenhagen Zoological Garden (146). On rare occasions, chlamydial infections acquired from sheep, goats, and birds result in reproductive problems in women (145,147,148).

Transmission of influenza viruses between humans and animals has implications for animals in public settings. Cases and clusters of human infection with swine influenza viruses have been reported sporadically since the 1970s (149,150); several of these cases have been acquired from swine at agricultural fairs (151–153). Conversely, transmission of human influenza viruses to swine also has been documented (154). For example, in 2009, an H1N1 influenza virus strain emerged, causing a pandemic among humans with sporadic transmission from humans to swine (155).

Recommendations

Guidelines from multiple organizations were used to create the recommendations in this report (156–158). Although no federal U.S. laws address the risk for transmission of pathogens at venues where the public has contact with animals, some states have such laws (64,67,159–161). For example, in 2005, North Carolina enacted legislation requiring persons displaying animals for public contact at agricultural fairs to obtain a permit from the North Carolina Department of Agriculture and Consumer Services (<http://www.ncga.state>).

nc.us/enactedlegislation/statutes/pdf/bysection/chapter_106/ gs_106-520.3a.pdf).

Certain federal agencies and associations in the United States have developed standards, recommendations, and guidelines for reducing risks associated with animal contact by the public in zoologic parks. The Association of Zoos and Aquariums has accreditation standards for reducing risk for animal contact with the public in zoologic parks (162). In accordance with the Animal Welfare Act, USDA licenses and inspects certain animal exhibits. These inspections primarily address humane treatment but also impact the health of the animal and safety of the public. In 2001, CDC issued guidelines to reduce the risk for infection with enteric pathogens associated with farm visits (66). CDC also has issued recommendations for preventing transmission of *Salmonella* from reptiles, amphibians, and live poultry to humans (27,77,78,86,163,164). The Association for Professionals in Infection Control and Epidemiology Inc. (APIC) and the Animal-Assisted Interventions Working Group (AAI) have developed guidelines to address risks associated with the use of animals in health-care settings (2,6). NASPHV has developed a compendium of measures to reduce risks for human exposure to *C. psittaci* and rabies virus (145,165).

Studies in some localities have suggested that implementation of these recommendations could be improved (60,166,167). Stakeholders should strive to facilitate comprehensive implementation of the following recommendations.

Recommendations for Local, State, and Federal Agencies

Communication and cooperation among human and animal health agencies should be enhanced and include veterinarians and cooperative extension offices. Additional research should be conducted regarding the risk factors and effective prevention and control methods for health issues associated with animal contact.

To enhance uptake of these recommendations, agencies should take the following steps:

- Disseminate this report to cooperative extension personnel, venue operators, and others associated with managing animals in public settings. States should strive to develop a complete list of public animal contact venues to facilitate dissemination of recommendations.
- Disseminate educational and training materials to venue operators and other stakeholders. Material formats could include PowerPoint slide presentations, videos, and written guidelines (164).
- Encourage or require oversight to ensure compliance with recommendations at animal contact venues.

To evaluate and improve these recommendations, surveillance for human health issues associated with animal contact should be enhanced. Agencies should take the following steps:

- Conduct thorough epidemiologic investigations of outbreaks.
- Include questions on disease report forms and outbreak investigation questionnaires about exposure to animals, animal environments, and animal products and feed.
- Follow appropriate protocols for sampling and testing of humans, animals, and the environment, including molecular subtyping of pathogen isolates.
- Report outbreaks to state health departments.
- Local and state public health departments should also report all outbreaks of enteric infections resulting from animal contact to CDC through the National Outbreak Reporting System (NORS) (<http://www.cdc.gov/outbreaknet/nors>).

Recommendations for Education

Education is essential to reduce risks associated with animal contact in public settings. Experience from outbreaks suggests that visitors knowledgeable about potential risks are less likely to become ill (14). Even in well-designed venues with operators who are aware of the risks for disease, outbreaks can occur when visitors do not understand risks and therefore are less likely to apply disease-prevention measures.

Venue operators should take the following steps:

- Become knowledgeable about the risks for disease and injury associated with animals and be able to explain risk-reduction measures to staff members and visitors.
- Become familiar with and implement the recommendations in this compendium.
- Consult with veterinarians, state and local agencies, and cooperative extension personnel on implementation of the recommendations.
- Develop or obtain training and educational materials and train staff members.
- Ensure that visitors receive educational messages before they enter the exhibit, including information that animals can cause injuries or carry organisms that can cause serious illness (Appendices A and B).
- Provide information in a simple and easy-to-understand format that is age- and language-appropriate.
- Provide information in multiple formats (e.g., signs, stickers, handouts, and verbal information).
- Provide information to persons arranging school field trips or classroom exhibits so that they can educate participants and parents before the visit.

Venue staff members should take the following steps:

- Become knowledgeable about the risks for disease and injury associated with animals and be able to explain risk-reduction recommendations to visitors.
- Ensure that visitors receive educational messages regarding risks and prevention measures.
- Encourage compliance by the public with risk-reduction recommendations, especially compliance with hand-washing procedures (Appendix C) as visitors exit animal areas.
- Comply with local and state requirements for reporting animal bites or other injuries.

Recommendations for Managing Public-Animal Contact

The recommendations in this report were developed for settings in which direct animal contact is encouraged (e.g., petting zoos and aquatic touch tanks) and in which animal contact is possible (e.g., county fairs). They should be tailored to specific settings and incorporated into guidelines and regulations developed at the state or local level. Contact with animals should occur in settings where measures are in place to reduce the potential for injuries or disease transmission. Incidents or problems should be investigated, documented, and reported.

Facility Design

The design of facilities and animal pens should minimize the risk associated with animal contact (Figure), including limiting direct contact with manure and encouraging hand washing (Appendix C). The design of facilities or contact settings might include double barriers to prevent contact with animals or contaminated surfaces except for in specified animal interaction areas. Previous outbreaks have revealed that temporary exhibits are often not designed appropriately. Common problems include inadequate barriers, floors and other surfaces that are difficult to keep clean and disinfect, insufficient plumbing, lack of signs regarding risk and prevention measures, and inadequate hand-washing facilities (13,14,19,33,36). Specific guidelines might be necessary for certain settings, such as schools (Appendix D).

Recommendations for cleaning and disinfection should be tailored to the specific situation. All surfaces should be cleaned thoroughly to remove organic matter before disinfection. A 1:32 dilution of household bleach (e.g., one-half cup bleach per gallon of water) is needed for basic disinfection. Quaternary ammonium compounds (e.g., Roccal or Zephiran) also can be used per the manufacturer label. For disinfection when a particular organism has been identified, additional guidance is available (<http://www.cfsph.iastate.edu/disinfection>). Most compounds require >10 minutes of contact time with a contaminated surface.

Venues should be divided into three types of areas: nonanimal areas (where animals are not permitted, with the exception of service animals), transition areas (located at entrances and exits to animal areas), and animal areas (where animal contact is possible or encouraged) (Figure).

Nonanimal Areas

- Do not permit animals, except service animals, in nonanimal areas.
- Prepare, serve, and consume food and beverages only in nonanimal areas.
- Provide hand-washing facilities and display hand-washing signs where food or beverages are served (Appendix C).

Transition Areas Between Nonanimal and Animal Areas

Establishing transition areas through which visitors pass when entering and exiting animal areas is critical. For areas where animal contact is encouraged, a one-way flow of visitors is preferred, with separate entrance and exit points. The transition areas should be designated as clearly as possible, even if they are conceptual rather than physical (Figure).

Entrance transition areas should be designed to facilitate education:

- Post signs or otherwise notify visitors that they are entering an animal area and that there are risks associated with animal contact (Appendix B).
- Instruct visitors not to eat, drink, smoke, place their hands in their mouth, or use bottles or pacifiers while in the animal area.
- Establish storage or holding areas for strollers and related items (e.g., wagons and diaper bags).
- Control visitor traffic to prevent overcrowding.

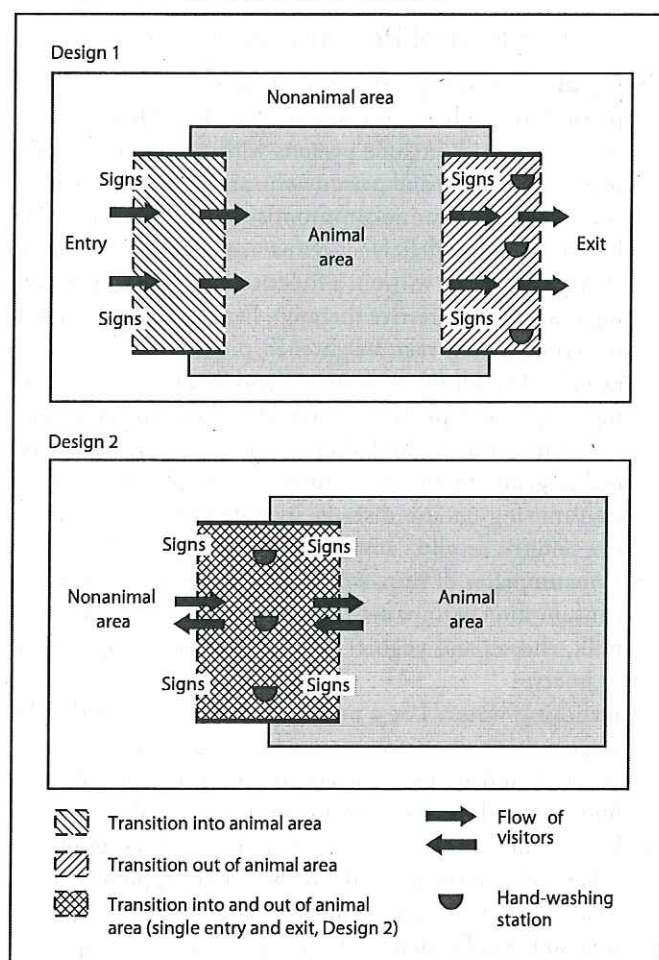
Exit transition areas should be designed to facilitate hand washing:

- Post signs or otherwise instruct visitors to wash their hands when leaving the animal area.
- Provide accessible hand-washing stations for all visitors, including children and persons with disabilities (Figure).
- Position venue staff members near exits to encourage compliance with proper hand washing.

Animal Areas

- Do not allow food and beverages in animal areas.
- Do not allow toys, pacifiers, spill-proof cups, baby bottles, strollers or similar items in animal areas.
- Prohibit smoking and other tobacco product use in animal areas.
- Supervise children closely to discourage hand-to-mouth activities (e.g., nail-biting and thumb-sucking), contact with manure, and contact with soiled bedding. Children should

FIGURE. Examples of designs for animal contact settings, including clearly designated animal areas, nonanimal areas, and transition areas with hand-washing stations and signs



not be allowed to sit or play on the ground in animal areas. If hands become soiled, supervise hand washing immediately.

- Ensure that regular animal feed and water are not accessible to the public.
- Allow the public to feed animals only if contact with animals is controlled (e.g., with barriers).
- Do not provide animal feed in containers that can be eaten by humans (e.g., ice cream cones) to decrease the risk for children eating food that has come into contact with animals.
- Promptly remove manure and soiled animal bedding from animal areas.
- Assign trained staff members to encourage appropriate human-animal interactions, to identify and reduce potential risks for patrons, and process reports of injuries and exposures.

- Store animal waste and specific tools for waste removal (e.g., shovels and pitchforks) in designated areas that are restricted from public access.
- Avoid transporting manure and soiled bedding through nonanimal areas or transition areas. If this is unavoidable, take precautions to prevent spillage.
- Where feasible, disinfect animal areas (e.g., flooring and railings) at least once daily.
- Provide adequate ventilation both for animals (168) and humans.
- Minimize the use of animal areas for public activities (e.g., weddings and dances). If areas previously used for animals must be used for public events, the areas should be cleaned and disinfected, particularly if food and beverages are served.
- For birds in bird encounter exhibits, refer to the psittacosis compendium (145) for recommendations regarding disease prevention and control.
- Visitors to aquatic touch tank exhibits who have open wounds should be advised not to participate. Hand-washing stations should be provided.
- When using animals or animal products (e.g., animal pelts, animal waste, and owl pellets) for educational purposes, only use them in designated animal areas. Animals and animal products should not be brought into school cafeterias and other areas where food and beverages are prepared, served, or consumed.
- When animals are in school classrooms, specific areas must be designated for animal contact (Appendix D). Designated animal areas must be thoroughly cleaned after use. Parents should be informed of the benefits and potential risks associated with animals in school classrooms.

Animal Care and Management

The risk for disease or injury from animal contact can be reduced by carefully managing the specific animals used. The following recommendations should be considered for management of animals in contact with the public.

- **Animal care:** Monitor animals daily for signs of illness and ensure that animals receive appropriate veterinary care. Ill animals, animals known to be infected with a zoonotic pathogen, and animals from herds with a recent history of abortion, diarrhea, or respiratory disease should not be exhibited. To decrease shedding of pathogens, animals should be housed to minimize stress and overcrowding.
- **Veterinary care:** Retain and use the services of a licensed veterinarian. Preventive care, including vaccination and parasite control, appropriate for the species should be provided. Certificates of veterinary inspection from an

accredited veterinarian should be up-to-date according to local or state requirements for animals in public settings. A herd or flock inspection is a critical component of the health certificate process. Routine screening for diseases is not recommended, except for *C. psittaci* in bird encounter exhibits (145), tuberculosis in elephants (141) and primates, and Q fever in ruminants in birthing exhibits (169).

- **Rabies:** All animals should be housed to reduce potential exposure to wild animal rabies reservoirs. Mammals should also be up-to-date on rabies vaccinations according to current recommendations (165). These steps are particularly critical in areas where rabies is endemic and in venues where animal contact is encouraged (e.g., petting zoos). Because of the extended incubation period for rabies, unvaccinated mammals should be vaccinated at least 1 month before they have contact with the public. If no licensed rabies vaccine exists for a particular species (e.g., goats, swine, llamas, and camels) that is used in a setting where public contact occurs, consultation with a veterinarian regarding off-label use of rabies vaccine is recommended. Use of off-label vaccine does not provide the same level of assurance as vaccine labeled for use in a particular species; however, off-label use of vaccine might provide protection for certain animals and thus decrease the probability of rabies transmission (165). Vaccinating slaughter-class animals before displaying them at fairs might not be feasible because of the vaccine withdrawal period that occurs as a result of antibiotics used as preservatives in certain vaccines. Mammals that are too young to be vaccinated should be used in exhibit settings only if additional restrictive measures are available to reduce risks (e.g., using only animals that were born to vaccinated mothers and housed to avoid rabies exposure). In animal contact settings, rabies testing should be considered for animals that die suddenly in addition to other diagnostic considerations.
- **Dangerous animals:** Because of their strength, unpredictability, venom, or the pathogens that they might carry, certain domestic, exotic, or wild animals should be prohibited in exhibit settings where a reasonable possibility of animal contact exists. Species of primary concern include nonhuman primates (e.g., monkeys and apes) and certain carnivores (e.g., lions, tigers, ocelots, wolves and wolf hybrids, and bears). In addition, rabies-reservoir species (e.g., bats, raccoons, skunks, foxes, and coyotes) should not be used for direct contact.
- **Animal births:** Ensure that the public has no contact with newly born animals or birthing by-products (e.g., the placenta). In live-birth exhibits, the environment should be thoroughly cleaned after each birth, and all waste

products should be properly discarded. Holding such events outside or in well-ventilated areas is preferable.

Additional Recommendations

- **Populations at high risk:** Children aged <5 years are at particularly high risk for serious infection. Other groups at increased risk include persons with waning immunity (e.g., older adults) and persons who are mentally impaired, pregnant, or immunocompromised (e.g., persons with human immunodeficiency virus/acquired immunodeficiency syndrome, without a functioning spleen, or receiving immunosuppressive therapy). Persons at high risk for infection should take heightened precautions at animal exhibits. In addition to thorough and frequent hand washing, heightened precautions could include avoiding contact with animals and their environment (e.g., pens, bedding, and manure). Animals of particular concern for transmitting enteric diseases include young ruminants, live poultry, reptiles, amphibians, and ill animals.
- **Consumption of unpasteurized products:** Prohibit the consumption of unpasteurized or raw dairy products (e.g., milk, cheese, and yogurt) and unpasteurized apple cider or juices.
- **Drinking water:** Local public health authorities should inspect drinking water systems before use. Only potable water should be used for consumption by animals and humans. Back-flow prevention devices should be installed between outlets in livestock areas and water lines supplying other areas on the grounds. If the water supply is from a well, adequate distance should be maintained from possible sources of contamination (e.g., animal-holding areas and manure piles). Maps of the water distribution system should be available for use in identifying potential or actual problems. The use of outdoor hoses should be minimized, and hoses should not be left on the ground. Hoses that are accessible to the public should be labeled "water not for human consumption." Operators and managers of settings in which treated municipal water is not available should ensure that a safe water supply (e.g., bottled water) is available.

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Appendix A

Animals in Public Settings: Guidelines for Venue Operators and Staff Members

Operators and staff members should be aware of the following risks for disease and injury associated with animals in public settings:

- Disease and injuries have occurred following contact with animals and their environment.
- Healthy animals can carry germs that make visitors sick.
- Visitors can pick up germs when they touch animals or animal droppings or enter an animal's environment.
- Visitors can rid themselves of most germs if they wash their hands immediately after leaving an animal area. Visitors should wash their hands even if they did not directly contact the animals.
- The risk for developing serious or life-threatening illnesses from contact with animals is higher among certain visitors, especially young children (i.e., aged <5 years), older adults, pregnant women, and persons with weakened immune systems.

Operators and staff members should take the following steps to maintain a safe environment when animals are present in public settings:

- Design the venue with safety in mind by having designated animal areas, nonanimal areas, and transition areas.
- Do not permit any animals other than service animals in nonanimal areas.
- Provide hand-washing facilities where food and beverages are prepared, served, or consumed.
- Assign trained staff members to monitor animal contact areas.
- Exclude food and beverages, toys, pacifiers, spill-proof cups, and baby bottles, and prohibit smoking in animal contact areas.
- Keep the animal areas as clean and disinfected as possible, and limit visitor contact with manure and animal bedding.
- Allow feeding of animals only if contact with animals can be controlled (e.g., over a barrier).

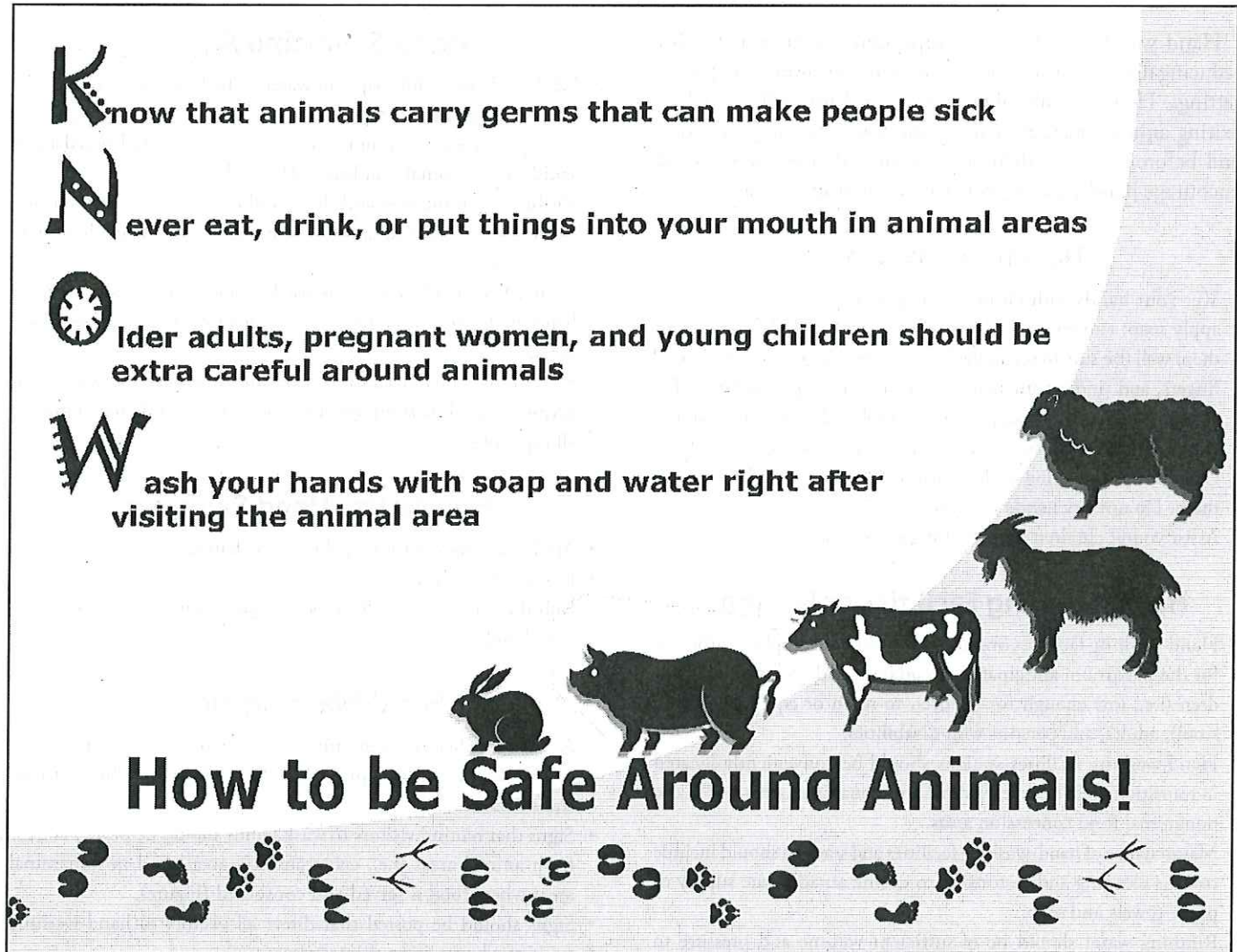
- Minimize use of animal areas for public activities (e.g., weddings, dances).
- Design transition areas for entering and exiting animal areas with appropriate signs or other forms of notification regarding risks of animal contact and location of hand-washing facilities.
- Maintain hand-washing stations that are accessible to children, and direct visitors to wash their hands when exiting animal areas.
- Position hand-washing stations in places that encourage hand washing when exiting animal areas.
- Ensure that animals receive appropriate preventive care, including vaccinations and parasite control.
- Provide potable water for animals.
- Prohibit consumption of unpasteurized dairy products (e.g., raw milk) and juices.

Operators and staff members should educate visitors regarding animal contact in public settings:

- Inform visitors about the risks for disease and injury before they enter animal areas.
- Provide simple instructions in multiple age- and language-appropriate formats.
- Direct visitors to wash their hands and assist children with hand washing immediately after visiting an animal area.
- Advise visitors that they should not eat, drink, or place things in their mouths after animal contact or visiting an animal area until they have washed their hands.
- Advise visitors to closely supervise children and to be aware that objects such as clothing, shoes, and stroller wheels can become soiled and serve as a source of germs after leaving an animal area.
- Make visitors aware that young children, older adults, pregnant women, and persons who are immunocompromised are at increased risk for serious illness.

Appendix B

Suggested Sign or Handout for Visitors to Petting Zoos*



* Sign available at <http://www.nasphv.org/documents/compendia/animals.html>. Additional information on animals in public settings and zoonotic diseases is available at <http://www.cdc.gov/healthypets>.

Appendix C

Hand-Washing Recommendations to Reduce Disease Transmission from Animals in Public Settings

Hand washing is the most important prevention step for reducing disease transmission associated with animals in public settings. Hands should always be washed immediately when exiting animal areas, after removing soiled clothing or shoes, and before eating or drinking. Venue staff members should encourage hand washing as persons exit animal areas.

How to Wash Hands

- Wet your hands with clean, running water (warm or cold) and apply soap; rub your hands together to make a lather and scrub them well (be sure to scrub the backs of your hands, between your fingers, and under your nails); continue rubbing your hands for at least 20 seconds; rinse your hands well under running water.
- If possible, turn off the faucet using a disposable paper towel.
- Dry your hands using a clean disposable paper towel or air dry them. Do not dry hands on clothing.
- Assist young children with washing their hands.

Hand-Washing Facilities or Stations

- Hand-washing facilities or stations should be accessible, sufficient for the maximum anticipated attendance, and accessible by children (i.e., low enough for children to reach or equipped with a stool), adults, and persons with disabilities.
- Hand-washing facilities stations should be conveniently located in transition areas between animal and nonanimal areas and in the nonanimal food concession areas.
- Maintenance of hand-washing facilities and stations should include routine cleaning and restocking to ensure an adequate supply of paper towels and soap.
- Running water should be of sufficient volume and pressure to remove soil from hands. Volume and pressure might be substantially reduced if the water supply is furnished from a holding tank; therefore, a permanent pressurized water supply is preferable.
- Hand-washing stations should be designed so that both hands are free for hand washing by having operation with a foot pedal or water that stays on after hand faucets are turned on.
- Liquid soap dispensed by a hand or foot pump is recommended.
- Hot water is preferable, but if the hand-washing facilities or stations are supplied with only cold water, a soap that emulsifies easily in cold water should be provided.
- Communal basins, in which water is used by more than one person, are not adequate hand-washing facilities.

Hand-Sanitizing Agents

- Washing hands with soap and water is the best way to reduce the number of germs on them.
- If soap and water are not available, use an alcohol-based hand sanitizer that contains at least 60% alcohol.
- Visible contamination and dirt should be removed before using hand sanitizers. Hand sanitizers are not effective when hands are visibly dirty.
- Even when hand sanitizer is used, visitors should always wash hands with soap and water as soon as possible after being in animal areas.
- Alcohol-based hand sanitizers can quickly reduce the number of germs on hands in some situations, but sanitizers do not eliminate all types of germs.

How to Use Hand Sanitizers

- Apply the product to the palm of one hand.
- Rub your hands together.
- Rub the product over all surfaces of your hands and fingers until your hands are dry.

Hand-Washing Signs

- At venues where human-animal contact occurs, signs regarding proper hand-washing practices are critical to reduce disease transmission.
- Signs that remind visitors to wash hands should be posted at exits from animal areas (i.e., exit transition areas) and in nonanimal areas where food is served and consumed (Figure).
- Signs should be posted that direct all visitors to hand-washing stations when exiting animal areas.
- Signs with proper hand-washing instructions should be posted at hand-washing stations and restrooms to encourage proper practices.
- If appropriate for the setting, hand-washing signs should be available in different languages.

Wash Hands When Leaving Animal Exhibits






WHO



Everyone, especially young children, older individuals, and people with weakened immune systems







WHEN

Always Wash Hands:

-  After touching animals or their living area
-  After leaving the animal area
-  After taking off dirty clothes or shoes
-  After going to the bathroom
-  Before preparing foods, eating, or drinking



HOW

-  Wet your hands with clean, running water
-  Apply soap
-  Rub hands together to make a lather and scrub well, including backs of hands, between fingers, and under fingernails
-  Rub hands at least 20 seconds. Need a timer? Hum the "Happy Birthday" song from beginning to end twice
-  Rinse hands
-  Dry hands using a clean paper towel or air dry them. Do not dry hands on clothing



For more information, visit CDC's Healthy Pets, Healthy People website (www.cdc.gov/healthypets) and CDC's Handwashing website (www.cdc.gov/handwashing).

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Appendix D

Guidelines for Animals in School and Child-Care Settings

Animals are effective and valuable teaching aids, but safeguards are required to reduce the risk for infection and injury. The following guidelines are a summary of guidelines developed by the Alabama Department of Public Health,^{*} the Kansas Department of Health and Environment,[†] and CDC (78,79). Recommendations also are available from the National Science Teachers Association[§] and the National Association of Biology Teachers.[¶]

General Guidelines for School Settings**

- Wash hands after contact with animals, animal products or feed, or animal environments.
- Supervise human-animal contact, particularly involving children aged <5 years.
- Display animals in enclosed cages or under appropriate restraints.
- Do not allow animals to roam, fly free, or have contact with wild animals.
- Designate specific areas for animal contact.
- Do not allow food in animal contact areas; do not allow animals in areas where food and drink are prepared, served, or consumed.
- Clean and disinfect all areas where animals and animal products have been present. Children should perform this task only under adult supervision.
- Do not clean animal cages or enclosures in sinks or other areas used to prepare, serve, or consume food and drinks.
- Obtain appropriate veterinary care, a certificate of veterinary inspection, or proof of rabies vaccination (or all of these) according to local or state requirements.
- Keep animals clean and free of intestinal parasites, fleas, ticks, mites, and lice.
- Parents should be informed of the benefits and potential risks associated with animals in school classrooms. Consult with parents to determine special considerations needed for children who are immunocompromised, have allergies, or have asthma.
- Ensure that personnel providing animals for educational purposes are knowledgeable regarding animal handling and zoonotic disease issues. Persons or facilities that display animals to the public should be licensed by the U.S. Department of Agriculture.

Animal-Specific Guidelines

- **Fish:** Use disposable gloves when cleaning aquariums, and do not dispose of aquarium water in sinks used for food preparation or for obtaining drinking water.
- **Psittacine birds (e.g., parrots, parakeets, and cockatiels):** Consult the psittacosis compendium,^{††} and seek veterinary advice. Use birds treated or that test negative for avian chlamydiosis.
- **Nonpsittacine birds:** See General Guidelines for School Settings.
- **Domestic dogs, cats, rabbits, and rodents (e.g., mice, rats, hamsters, gerbils, guinea pigs, and chinchillas):** See General Guidelines for School Settings.
- **Reptiles (e.g., turtles, snakes, and lizards):** Do not keep in facilities with children aged <5 years, nor should children aged <5 years be allowed to have direct contact with these animals.
- **Amphibians (e.g., frogs, toads, salamanders, and newts):** Do not keep in facilities with children aged <5 years, nor should children aged <5 years be allowed to have direct contact with these animals.
- **Live poultry (e.g., chicks, ducklings, and goslings):** Do not keep in facilities with children aged <5 years, nor should children aged <5 years be allowed to have direct contact with these animals.

* WB Johnston, DVM, Alabama Department of Public Health, personal communication, 2002.

† Hansen GR. Animals in Kansas schools: guidelines for visiting and resident pets. Topeka, KS: Kansas Department of Health and Environment; 2004. Available at <http://www.kdhe.state.ks.us/pdf/heff/ab1007.pdf>.

§ National Science Teachers Association. National standards for science teacher preparation. Arlington, VA: National Science Teachers Association; 2003. Available at <http://www.nsta.org/preservice>.

¶ National Association of Biology Teachers. The use of animals in biology education. Reston, VA: National Association of Biology Teachers; 2008. Available at <http://www.nabt.org/websites/institution/File/docs/use%20of%20animals.pdf>.

** Guide, hearing, or other service animals and law enforcement animals may be used when they are under the control of a person familiar with the specific animal and in accordance with recommendations from the sponsoring organizations.

†† National Association of State Public Health Veterinarians. Compendium of measures to control *Chlamydia psittaci* infection among humans (psittacosis) and pet birds (avian chlamydiosis), 2010. Available at <http://www.nasphv.org/documents/CompendiaPsittacosis.html>.

- **Ferrets:** Do not keep in facilities with children aged <5 years, nor should children aged <5 years be allowed to have direct contact with these animals to prevent bites.
- **Farm animals:** See General Guidelines for School Settings. Certain animals (e.g., young ruminants and baby poultry) intermittently excrete substantial numbers of germs; therefore, these farm animals are not appropriate in school or child-care settings unless meticulous attention to personal hygiene can be ensured.
- **Animal products:** Assume that products such as owl pellets and frozen rodents used to feed reptiles are contaminated with *Salmonella* organisms. Owl pellets should not be dissected in areas where food is prepared, served, or consumed. Children aged <5 years should not be allowed to have direct contact with animal products.

Animals Not Recommended in School or Child-Care Settings

- Inherently dangerous animals (e.g., lions, tigers, cougars, and bears).
- Nonhuman primates (e.g., monkeys and apes).
- Mammals at high risk for transmitting rabies (e.g., bats, raccoons, skunks, foxes, and coyotes).
- Aggressive or unpredictable wild or domestic animals.
- Stray animals with unknown health and vaccination history.
- Venomous or toxin-producing spiders, insects, reptiles, and amphibians.

National Association of State Public Health Veterinarians, Inc., Committee

Co-chairpersons: John R. Dunn, DVM, Tennessee Department of Health, Nashville, Tennessee; Kirk E. Smith, DVM, Minnesota Department of Health, St. Paul, Minnesota.

Members: Carina Blackmore, DVM, Florida Department of Health, Tallahassee, Florida; Louisa Castrodale, DVM, Alaska Department of Health and Social Services, Anchorage, Alaska; Ron Wohrle, DVM, Washington State Department of Health, Olympia, Washington; James H. Wright, DVM, Texas Department of State Health Services, Tyler, Texas.

Consultants to the Committee: Marianne Ash, DVM, American Veterinary Medical Association Council on Public Health and Regulatory Veterinary Medicine, Schaumburg, Illinois; Casey Barton Behravesh, DVM, CDC, Atlanta, Georgia; Karen Beck, DVM, North Carolina Department of Agriculture and Consumer Services, Raleigh, North Carolina; Marla J. Calico, International Association of Fairs and Expositions, Springfield, Missouri; Allan Hogue, DVM, US Department of Agriculture, Riverdale, Maryland; Carla Huston, DVM, American Association of Extension Veterinarians, Starkville, Mississippi; Timothy F. Jones, MD, Council of State and Territorial Epidemiologists, Atlanta, Georgia; Thomas P. Meehan, DVM, Association of Zoos and Aquariums, Silver Spring, Maryland.

Recommendations and Reports

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Sample Health and Safety Policy

The following section is a sample Health and Safety Policy. Based on award-winning policies, the following is a template you can use to create a complete policy specific to your fair. Since every fair is different, there are certain portions of the policy that you will have to change or fill-in with more information (marked in red).

Take Action

Step 1:

- ☐ Review the sample Health and Safety Policy located here and on the flash drive in section 6.

Step 2:

- ☐ Using the *Your Health and Safety Policy* template on the flash drive in, fill in your fair's information. Print and place your new policy in section 4.

Step 3:

- ☐ Using the map of your facilities, mark all animal contact areas including:
 - Animal housing areas
 - Animal traffic (load in/out) areas
 - Any animal contractors

Include this map with your Health and Safety Policy in section 4.

(Insert Your Fair's Logo Here)



Health and Safety Campaign Policy

(Insert Your Fair Name Here)

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(Insert Your Fair's Logo Here)

(Your Fair Name Here) Health and Safety Policy

Consistent quality assurance programs, informational and bilingual public signage, and veterinary assistance are all components of the Public Health Policy of the fair. It is the intention of *(Your Fair Name Here)* to educate the public about the environmental concerns they may encounter not only when around farm animals at the fair, but also with animal exhibits. More importantly, the general public should be aware of the precautions necessary to avoid contracting an enteric (intestinal) disease. This program of action will give the public the proper information, supplemented by various fair and health organizations, to help them make good decisions when visiting the fairgrounds.

Although the *Escherichia (E.) coli* O157:H7 strain is our main focus; there are other enteric diseases that can be encountered on farms and at public venues housing animals. Among these, *Campylobacter*, *Salmonella* and *Cryptosporidium* are addressed by the Centers for Disease Control and Prevention's (CDC) *Compendium of Measures to Prevent Disease Associated with Animals in Public Settings, 2011*.

E. coli is an enteric pathogen usually found in the gastrointestinal systems of ruminant animals, and is passed or "shed" through the fecal matter. However, research has shown that E. coli can be found on or in many non-ruminant animals and insects, including but not limited to poultry, swine, rodents, common flies and other species. This pathogen, if shed from the animal, can build up on the animal (fur/feathers or hair), live in the soil, or survive in dust or dried fecal matter not removed from animal areas. The organism is resilient and evasive, providing many opportunities to come into contact with humans in farm animal settings.

It should be noted that the immune system of a healthy adult should be able to resist certain levels of the infection, however the CDC's Compendium as well as publications by the United States Department of Agriculture noted that children under the age of five years old, pregnant women and immune-compromised persons (such as cancer, HIV or AIDS patients) should take extra care when around animals.

It is also important that any person exhibiting flu-like symptoms or a temperature in the last seven days not attend the livestock area.

(Insert Your Fair's Logo Here)

The key when handling livestock in a public setting is having skilled employees and volunteers interacting with the exhibitors and animals in all situations. It is also very important that our facility can go on lock down in a matter of minutes.

The *(Year) (Your Fair Name Here)* will comply with recommendations outlined in the *Compendium of Measures to Prevent Disease Associated with Animals in Public Health Settings, 2011*. Prepared by the National Association of State Public Health Veterinarians, Inc., the Compendium is prepared to assist animal venue operators, exhibitors, veterinarians and various public health agencies by providing recommendations to minimize the potential for risks that may be associated with animals in public settings.

Signage and Education

Signage:

Signs are presented in English and Spanish *(Add other languages if necessary)*, and depict pictorial clues as well as word explanations. Signage is placed throughout the grounds in all animal contact areas, at food and concession stands, and in restrooms to remind the public of the following:

1. Wash Your Hands When Leaving Animal Areas!
2. Toys, Pacifiers, Bottles, and Cups Can Become Contaminated and Should Be In A Sealed Bag When In Animal Areas.
3. Make Sure To Sanitize Strollers and Wagons Before Putting Them Away!
4. Do Not Bring Food And Beverages Into Animal Areas!
5. Keep Your Animal Areas Clean At All Times!
6. Wash Your Hands Before Eating or Drinking
7. Caution: You are entering an area where animal wastes may be present on animals and surfaces. If ingested, microbes in these wastes may cause diarrhea, cramps, nausea, headaches or other ailments.

Older adults, pregnant women, young children and people with compromised immune systems should take extra precautions when around animals.

(Insert Your Fair's Logo Here)

If you have had a flu or temperature in the last seven days, we recommend you DO NOT enter the barn.

8. Precaución: Usted está entrando un área donde puede haber excremento de animales en las superficies y en los animales. Si lo ingiere, los microbios que el excremento contiene puede causar diarrea, calambres, náusea, dolores de cabeza u otras enfermedades.

Los mayores de edad, las mujeres embarazadas, los niños menores y personas que ya tienen enfermedades deben tomar precauciones extras cuando estén cerca de los animales.

Si le dio la gripa o una temperatura en los últimos siete días, recomendamos que NO entre al granero.

9. Wash Your Hands

Step 1: Wet your hands with clean running water and apply soap.

Step 2: Rub hands together creating a lather and scrub well, including backs of hands, between fingers, and under fingernails.

Step 3: Rinse hands and dry using a clean paper towel or air dry them.

10. Lávese las manos

Paso 1: Moje las manos con agua limpia de la llave y échate jabón.

Paso 2: Frota las manos juntas, creando una espuma de jabón y tállalas bien, incluyendo el lado de atrás, entre los dedos y debajo de las uñas.

Paso 3: Enjuaga las manos y sécalas usando una toalla de papel o déjalas secarse con el aire.

Education:

- Exhibitors are encouraged to be familiar with current risk reduction methods and practices.
- Exhibitors are encouraged to remind visitors to practice good personal hygiene and encourage hand-washing after visiting animal exhibitions and before eating.
- Docents are located at the entrances and exits of the animal contact areas to promote hand-washing.
- Informational materials include locations of hand-washing facilities.

Animal Contact Areas

Hand-Washing Areas:

- *(Your Fair Name Here)* has directional signage in the following areas:

(Insert Your Fair's Logo Here)

- **(#)** Permanent restrooms
- **(#)** Hand-washing stations
- **(#)** Hand-sanitizer stations

Signage is located throughout the grounds directing people to the restrooms and hand-washing stations.

Commercial Exhibitors:

- Any commercial exhibitor that has potential animal to human contact areas will be required to have a hand-sanitizing station for all fair patrons near their areas.
- Potential exhibitors are:
 - **Petting Zoos**
 - **Animal Shelters**
 - **Enforcement Animal Displays**
 - **Reptile Shows**
 - **Animals Shows**

Food Concessionaires

All food concession stands have signage encouraging good hygiene by reminding fair patrons to wash their hands before eating.

Operations

- It is recommended that children under five years of age are accompanied and supervised by an adult.
- Manure disposal sites are located on grounds. The designated disposal area will be inaccessible to the public.
- Soap and running water hand-washing stations with paper towels and appropriate disposal containers are located in all appropriate areas.
- Sanitation stations are located in all animal/human contact areas.
- Docents are located at the entrances and exits of the animal contact areas to promote hand-washing and to distribute plastic bags for comfort items.
- There are transition areas for directing patrons to hand-washing and hand-sanitizing stations.

Animal Care Management

- An official veterinarian is onsite for all **(Number of days of your fair)** days of the fair to monitor animals.
- Animals are monitored daily by caregivers for signs of illness. If an illness is observed, the animal(s) will be reported immediately to the livestock office for observation by the veterinarian.

(Insert Your Fair's Logo Here)

- Animals are taken care of to promote good health and reduce stress and overcrowding.
- ALL animals are visually inspected prior to entering the fairgrounds to ensure there are no visible sign of illnesses.

Staying Accountable

Designated personnel of *(Your Fair Name Here)* are placed in charge of handling the day-to-day operations of the exhibits and ensuring that these policies set forth are followed directly. Records are kept to ensure all measures have been taken.

(Insert Your Fair's Logo Here)

Health and Safety Partners at *(Your Fair Name Here)*

To annually provide a safe and healthy environment for patrons, the fair works with a variety of *(State, County, City, and Private agencies; include which ones are relevant to you)* to comply with and exceed the health and safety requirements set forth by the State of California and city of *(Your Fair Location)*.

(Your Fair Name Here) works with the following agencies **(examples are in blue)**:

- **California Fair Services Authority (CFSA)**
Each year, *(Your Fair Name Here)* works closely with the California Fair Services Authority, a nonprofit Joint Powers Authority in Sacramento, California, offering member services including: safety specialists, risk pool management, loss control expertise, claims adjusting, accounting and more. CFSA inspectors work with the fair to ensure the safety of all buildings and attractions in an effort to make the fair a safe place to visit. Inspections by CFSA occur during their visit to the fair, on all general fairground public areas and buildings.
- **Western Fairs Association (WFA)**
(Your Fair Name Here) works with Western Fairs Association, a non-profit trade association serving the fair industry throughout the Western United States and Canada, to continue to use best practices on the fairgrounds. The primary objective of Western Fairs Association is to promote the prosperity of fairs through educational activities, training programs, and legislative advocacy.
- **California Department of Food and Agriculture Division of Fairs and Expositions (F&E)**
The Division of fairs and Expositions works with *(Your Fair Name Here)* to create a framework for administration that allows for maximum autonomy and local decision making authority, guidance to seek matching funds and generate new revenue from a variety of sources, support continuous improvement of fair programs to ensure they remain highly relevant community institutions, and ensure annual fiscal audits and biennial compliance audits are performed.

(Insert Your Fair's Logo Here)

- **Western Fair Ambulance Company**

This company is contracted by the *(Your Fair Name Here)* to work in conjunction with and augment other contracted fair security to ensure the safety of patrons.

- **Western Fair Consulting**

(Your Fair Name Here) has contracted with Western Fair Consulting to inspect all carnival rides. The company will conduct ride inspections during the set up and also during the first several days of the fair, after which CFSA inspectors will take over checking ride logs and making sure the rides continue to operate properly and safely.

- **State Fire Marshall's Office & Western Fairs City Fire Department**

(Your Fair Name Here) works closely with the State Fire Marshall to ensure that there are no fire hazards at the fair and that all buildings are within fire safety compliance. Additionally, the fair works with the Western Fairs Fire Department to ensure there is a quick response plan in place should there be an emergency.

- **Western Fairs County Department of Health**

The *(Your Fair Name Here)* works closely with the Western Fairs County Department of Public Health to ensure all food and drink vendors comply with the regulations as specified in the California Health and Safety Code.

- **Western Fairs City Police Department**

The *(Your Fair Name Here)* contracts annually with the Western Fairs City Police Department to oversee and work in conjunction with other fair security operations to ensure the safety of fair visitors. Managed by Sergeant Steve Chambers, the fair works year-round developing the security plan and meets frequently beginning a month before the fair on the implementation of that plan for the upcoming event.

- **Western Fairs County Private Security**

Western Fairs County Private Security is contracted by the *(Your Fair Name Here)* to work in conjunction with and to augment other contracted fair security to ensure the safety of patrons.

(Insert Your Fair's Logo Here)

**List of your fair's
cleaning products,
hand sanitizers and
their efficacy
summaries here.**

(Insert Your Fair's Logo Here)

**Insert your waste
management
protocol here.**

(Insert Your Fair's Logo Here)

EXAMPLE

Waste Management Protocol

Waste Management represents one of the greatest challenges to operating a successful fair or exposition event. Proper waste management programs are critical for efficient and sanitary events and include recommendations for exhibitors as well as protocols for the removal of animal waste in public areas.

Exhibitors Protocol

The *(Your Fair Name Here)* is constantly in motion with animals, exhibitors, visitors and staff moving from location to location. Exhibitors are asked to play an active role in managing waste removal for enhanced consumer protection, including:

- Exhibitors are encouraged to conduct through waste removal and bedding changes before the opening of the daily event, as needed.
- Exhibitors are encouraged to conduct through waste removal and bedding changes after the close of the daily event, as needed.
- Exhibitors are encouraged to remove manure promptly during the day, preventing the build-up of waste in animal exhibition areas.
- Exhibitors are encouraged to store waste removal equipment away from public areas, if possible.

(Insert Your Fair's Logo Here)

Insert your wet clean-up protocol here.

There is a wide range of abilities and situations throughout the network of fairs regarding wet clean-up protocol. The following is an actual example from a fair. Your fair will need to determine your capacity and develop a wet clean-up protocol that works for you.

(Insert Your Fair's Logo Here)

EXAMPLE

The *(Your Fair Name Here)* Wet Clean-Up Sanitation Protocol

The *(Your Fair Name Here)* is constantly in motion, with animals, exhibitors, visitors and staff constantly moving from location to location. Occasionally, animals on the move answer the call of nature in public access areas, necessitating a wet clean-up of manure or urine. The *(Your Fair Name Here)* utilizes a two-step process to deal with these events.

Step 1: Shovel/Sweep

Upon learning of a wet clean-up need, crews are dispatched by radio to the site as quickly as possible. If crews happen to view a call of nature event in progress, they ask the exhibitor to stop and wait while the animal finishes its business, reducing the size of the wet clean-up and concentrating the cleaning zone. Crews then begin the cleaning process by shoveling/sweeping any manure into waste bins.



Step 2: Sanitize

Once the area has been cleaned and rinsed, crews finish the job by applying a sanitizer to the area of the wet clean-up.



(Insert Your Fair's Logo Here)

Insert your split show sanitation protocol here.

There is a wide range of abilities and situations throughout the network of fairs regarding split show sanitation protocol. The following is an actual example from a fair. Your fair will need to determine your capacity and develop a split show sanitation protocol that works for you.

(Insert Your Fair's Logo Here)

EXAMPLE

The *(Your Fair Name Here)* "Split Show" Sanitation Protocol

The Livestock Pavilion at *(Your Fair Name Here)* is commonly used for multiple shows, breeds or events during the fair, and houses different species of animals during different times of the fair. The process of utilizing a barn for more than one type of show is called a Split Show. In order to properly sanitize the area during the change-over, the *(Your Fair Name Here)* utilizes a three-step sanitation process to deal with these events.

Step 1: Shovel

At the close of one show, after the exhibitors and animals have departed, and before the beginning of the next show, barn crews employed by the *(Your Fair Name Here)* remove any panels, animal bedding, animal feed and waste from the barn. This process includes use of tractors, wheelbarrows and other equipment.



(Insert Your Fair's Logo Here)

Step 2: Spray

Once the bedding material, waste and feed has been removed, crews spray the area with a commercial grade disinfectant, using a combination of portable sprayers and truck-mounted equipment.



Step 3: Re-Configure

After the area has been sprayed, fresh bedding is delivered and spread, and panels are added as needed.



**Insert your
Health and Safety
Policy here.**

**Insert your facility
map marked with
the locations of all
animal contact
areas including:**

- **Animal housing**
- **Animal traffic (loading
in/out)**
- **Any animal contractors**

Hand-Washing Stations

After reviewing this section, take the time to make sure you have a hand-washing station or bathroom in all necessary areas and that they are all ADA compliant.

Included in this section

1. Hand-Washing Station Requirements
2. Purchasing Guidelines
3. Build Your Own Hand-Washing Stations
4. Place holder for hand-washing station locations

Take Action

Step 1:

- ☐ Access your hand-washing station needs by creating a facility map. Use the animal contact map created in section 3.

Step 2:

- ☐ If more or new hand-washing stations are needed, here are three options:

1. Purchase new hand-washing stations.

Hand-washing stations can be purchased from a few different places. Many times the companies that sell port-a-potties also sell hand-washing stations. It is cheaper to purchase from a vendor in your area. However, here is an example of a company that sells ADA-compliant hand-washing stations:

Woody's Manufacturing
Contact: Dick Dias, Owner
2900 E. Monte Vista Avenue
P.O. Box 1628
Turlock, CA 95381
(209) 634-2948

2. Build your own hand-washing stations.

Use the plans included in this section to build your own ADA compliant hand-washing stations that are currently used on fairgrounds in California.

3. Rent or share hand-washing stations with a neighboring fair.

Hand-washing stations can be rented from a vendor in your area or rented or shared with a neighboring fair.

Step 3:

- ☐ Insert a copy of your final map into the clear sheet protector provided in this section.

Hand-Washing Station Requirements

The following information is taken from the Compendium of Measures to Prevent Disease Associated with Animals in Public Settings, 2011.

1. Hand-washing facilities or stations should be accessible and sufficient for the maximum anticipated attendance, and be accessible by children (i.e. low enough for children to reach or equipped with a stool), adults and persons with disabilities.
2. Hand-washing facilities or stations should be conveniently located in transition areas between animal and non-animal areas, and in all food areas.
3. Maintenance of hand-washing facilities and stations should include a routine cleaning and restocking plan to ensure an adequate supply of paper towels and soap.
4. Running water should be of sufficient volume and pressure to remove soil from hands. Volume and pressure might be substantially reduced if the water supply is furnished from a holding tank; therefore, a permanent pressurized water supply is preferable.
5. Hand-washing stations should be designed so both hands are free for washing by having a foot pedal or water that stays on after hand faucets are turned on.
6. Liquid soap dispensed by a hand or foot pump is recommended.
7. Hot water is preferable, but if the hand-washing facilities or stations are supplied with only cold water, a soap that emulsifies easily in cold water should be provided.
8. Communal basins, in which water is used by more than one person, are not adequate hand-washing facilities.

Purchasing Guidelines

Making sure that you purchase the right hand-washing stations is important. Here are some things to ask yourself and the company you are purchasing from:

1. Research to find companies that are in your area. Does the company that you purchase port-a-potties from sell hand-washing stations? Can you get a deal for purchasing both from one company?
2. Are the hand-washing stations that you are purchasing ADA compliant?
3. Does the company have good product and service reviews?
4. Are the hand-washing stations children, adult and disabled persons friendly?
5. Who services them when repairs are needed?
6. Do you have to hire staff members to monitor and re-supply the stations or does the selling company send people?
7. Do they fit and will be they be easily accessible in the areas in which you need them?
8. Will you have to install underground plumbing to accommodate hand-washing stations?
9. Review your facility map for best locations of underground plumbing. How many plumbing areas are required?

Build Your Own Hand-Washing Stations

The following documents include information, pictures and plans for building your own touch free hand-washing stations. Do not be intimidated by this project because it is simple and depending on what you pay for your purchased hand-washing stations, it can save you some money.

Example Implementation

The California State Fair

In 2009, the California State Fair introduced the Touch Free Hand-Washing Stations in response to the goal of providing quality and sufficient hand-washing stations that were accessible to adults, children and physically challenged individuals. The units built not only met the Sacramento County Health Department requirements, but ADA regulations as well. The stations are user friendly with a laser that turns the water on when people approach. They are also able to accommodate six individuals at one time. One of the most important elements was the signage placed over the hand-washing stations. Each sign had hand-washing directions displayed on each side. Due to the fact that the California State Fair provided quality hand-washing stations that can be used in years to come, the expense will be spread out and well worth it.

The Puyallup Fair

In 1999, the Puyallup Fair took action by providing over 20 new sinks with warm water and soap in six new permanent and/or portable hand-washing facilities. Signage reminding guests to wash their hands was included with the new sink facilities, along with signage in the restrooms as well. The stations are user friendly, having sinks in different heights making them accessible to adults, children and physically challenged individuals.

The California State Fair



Children enjoyed using the Touch Free Hand-Washing Station because the water was activated by a laser similar to a garage door.



The Touch Free Hand-Washing Stations were clearly designated and directions were displayed on both sides.



The Touch Free Hand-Washing Stations were located at all three entrances/exits at The Farm.

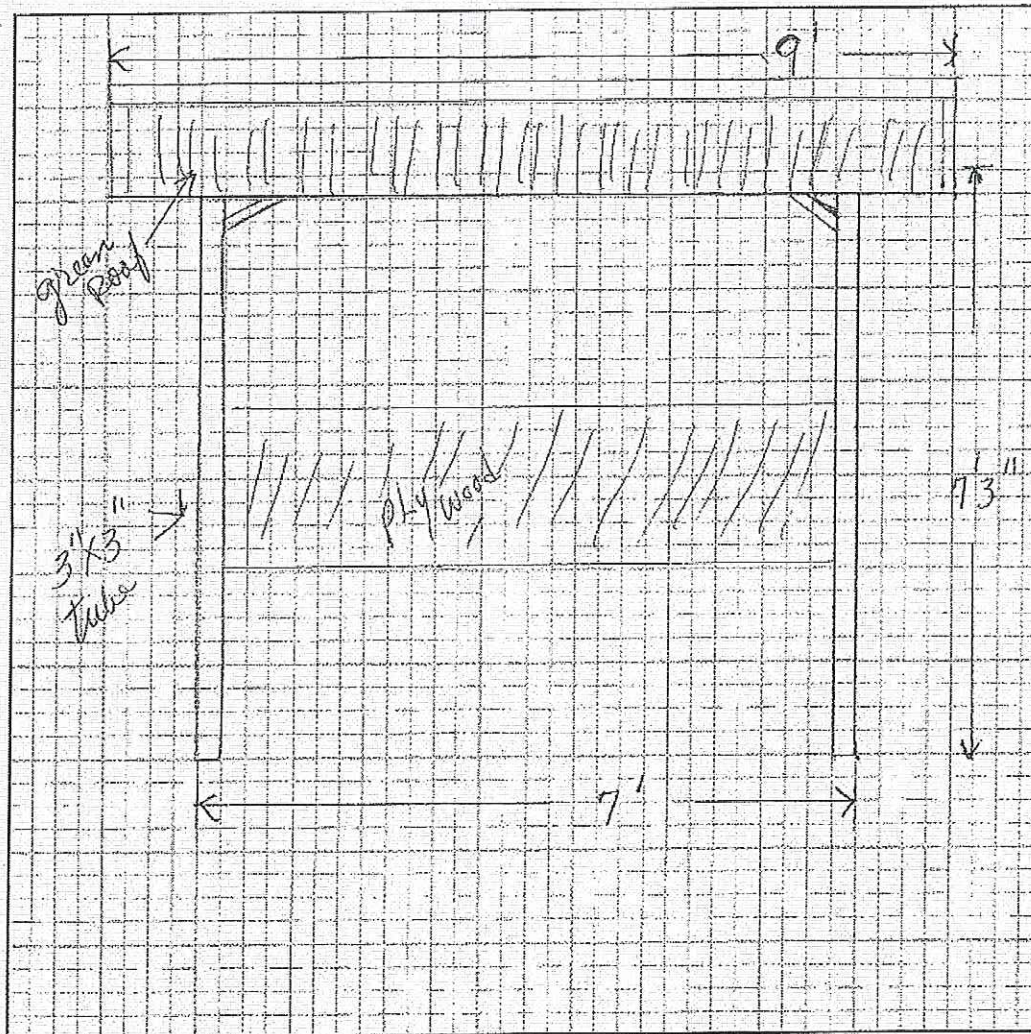


A grate was put inside the wash tub so paper towels did not clog the pipes. The grate was painted copper to match the exterior plumbing pipes. The unit is ADA compliant and services six adults and/or children at one time.

page 1

JOB NAME State Fair
ADDRESS Wash Station
PHONE _____
FAX _____

DATE 7-27-08
FROM Dick D. Lee
ADDRESS _____
PHONE _____
FAX _____



Woody's
MANUFACTURING

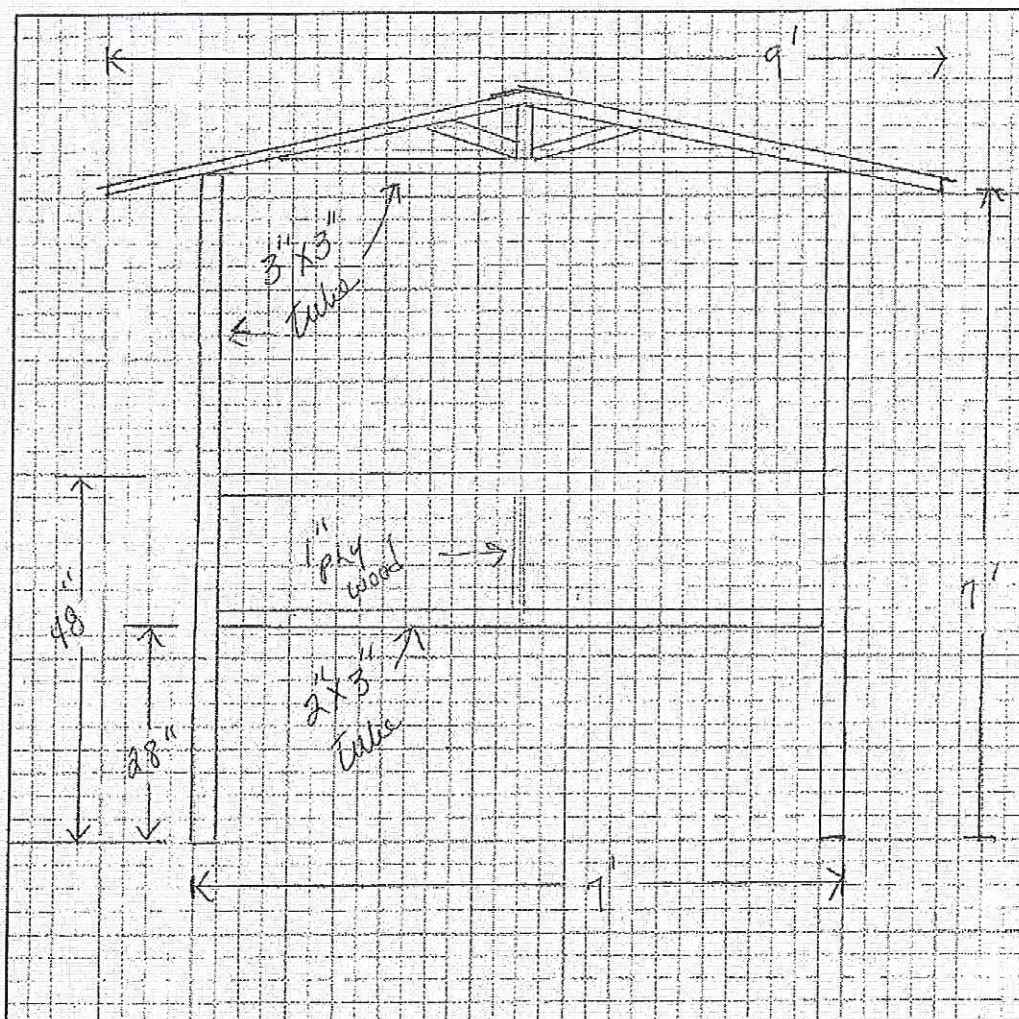
2900 E. Monte Vista Avenue
P.O. Box 1628 Turlock, California 95381
1-800-624-6091 • Ph. 209-634-2948 • Fax 667-9032
Manufacturers of Quality Custom Metal Products

Page 2

DATE 7-27-08

JOB NAME _____
ADDRESS _____
PHONE _____
FAX _____

FROM _____
ADDRESS _____
PHONE _____
FAX _____



Woody's
MANUFACTURING

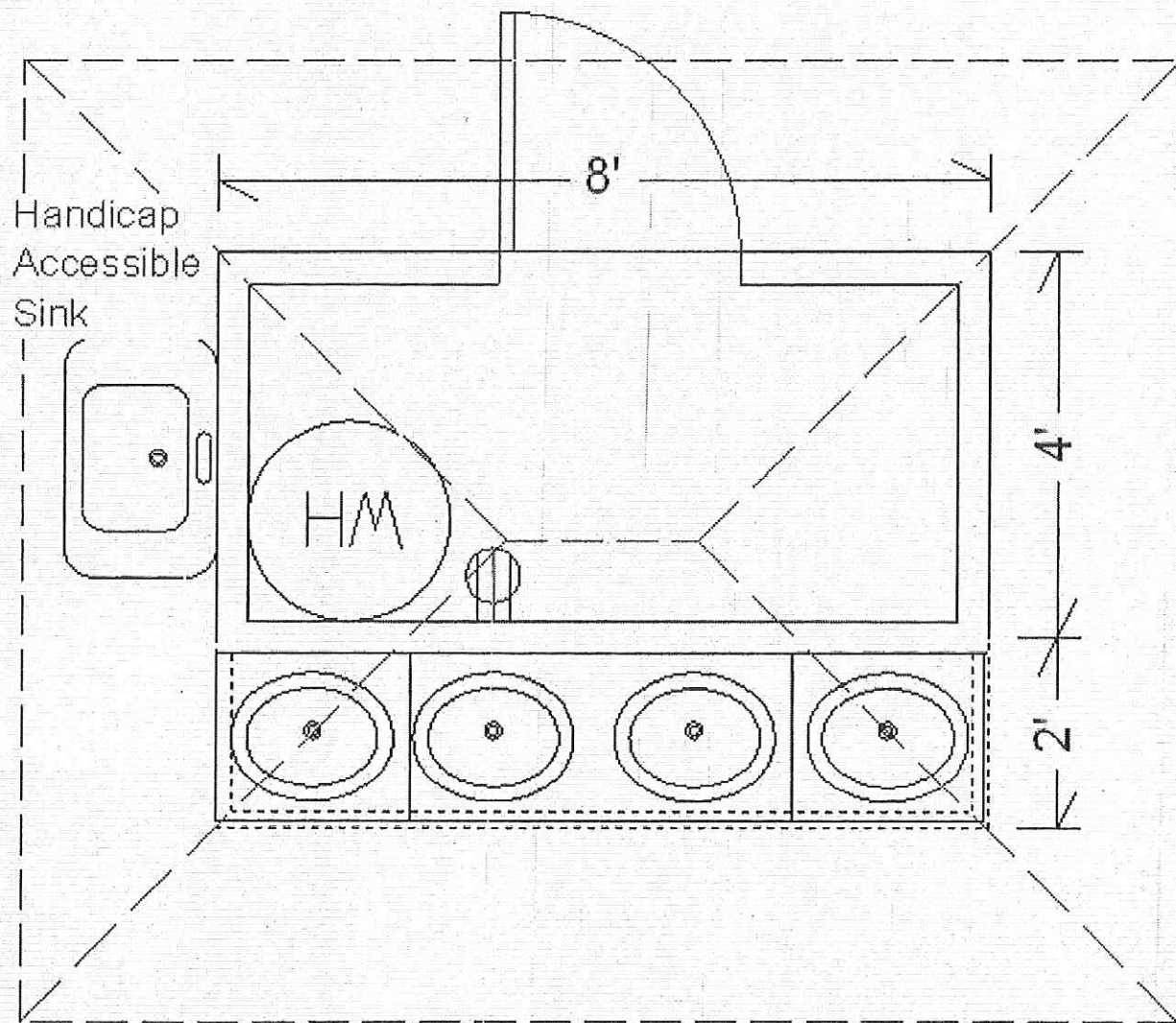
2900 E. Monte Vista Avenue
P.O. Box 1628 Turlock, California 95381
1-800-624-6091 • Ph. 209-634-2948 • Fax 667-9032
Manufacturers of Quality Custom Metal Products

The Puyallup Fair



As shown, the sinks vary in height at each station, making them accessible to adults, children and physically challenged individuals.





Western Washington Fair Association

HAND WASHING STATION

Insert a map of your
fairgrounds here.

Mark where all
hand-washing
stations and
restrooms are
located.

Educational Materials

Education is important when trying to reduce the risks of animal contact in a public setting. If visitors and exhibitors are not educated on the possible risks, they are less likely to apply any disease prevention behavior.

Included in this section

1. Signs 1-10, with location and placement instructions
2. *Play It Safe* brochure
3. A flash drive containing signs 1-10, the brochure and a sample health and safety policy.
4. *Play It Safe* DVD
5. An insert for your sign location map

Take Action

Step 1:

- ☐ Review the signs and brochure in this section.

Step 2:

- ☐ Assess your signage needs by creating a facility map. Match signs 1-10 with the necessary locations on the map. You can use the maps with the marked animal housing/traffic areas and hand-washing station/restrooms as well.

Step 3:

- ☐ Determine the number of food vendors you have and print the necessary number of signs. Include these signs in vendor packets and require that the signs be posted in an area that customers can see.

Step 4:

- ☐ After determining the number of each sign needed, print and laminate.

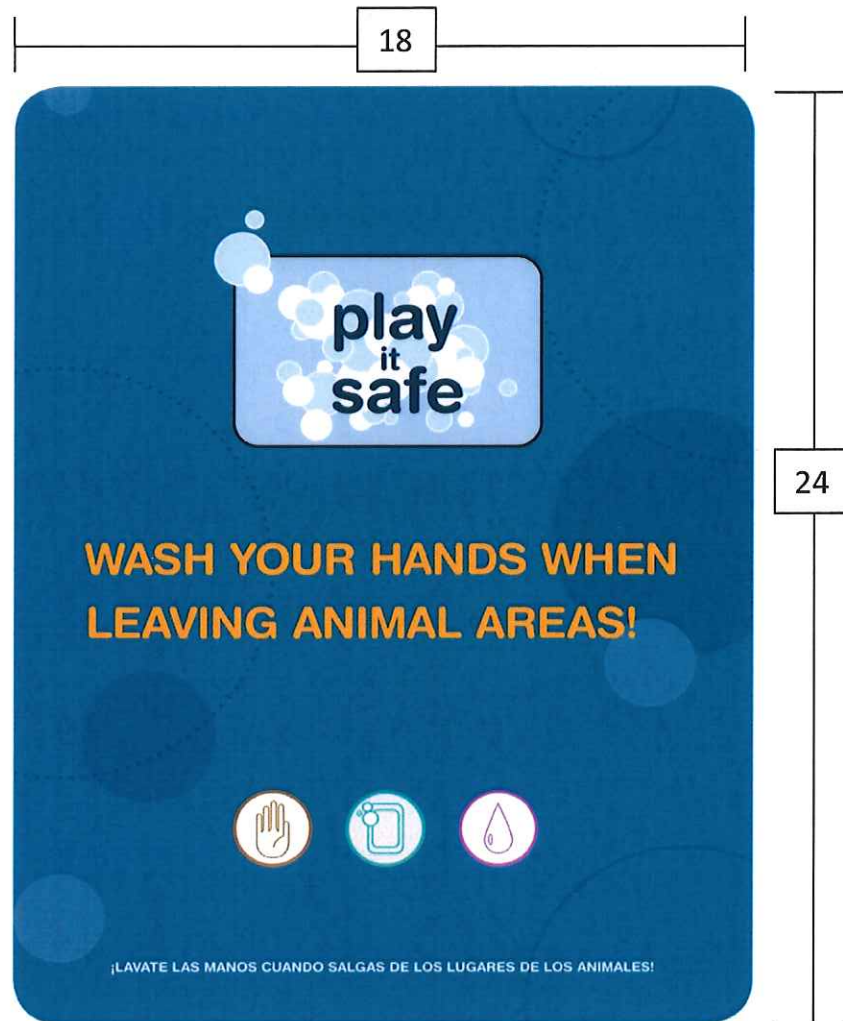
Step 5:

- ☐ Place the signs in the necessary locations making sure nothing is obstructing the view.

Step 6:

- ☐ Label your facility map so every sign location is marked.

Sign 1



This sign should be posted:

- **At the exits of animal areas.**

This sign should be printed as size 18"x24" and be posted at the exit of animals areas.

- **Next to hand-washing stations.**

This sign should be printed as size 18"x24" and located next to any hand-washing stations that are at the entrances and exits of animal areas.

This sign can be found on the *Play It Safe* flash drive included in the tool kit.

- Play It Safe/Signage/Sign 1

Sign 2



This sign should be posted:

- **At the entrances of animal areas.**

This sign should be printed as size 11"x14" and posted at the entrances of all animal areas and near the No Food or Drinks in Animal Areas signs.

- **Inside animal areas.**

This sign should be printed as size 11"x14" and placed inside animal areas.

This sign can be found on the *Play It Safe* flash drive included in the tool kit.

- Play It Safe/Signage/Sign 2

Sign 3



This sign should be posted:

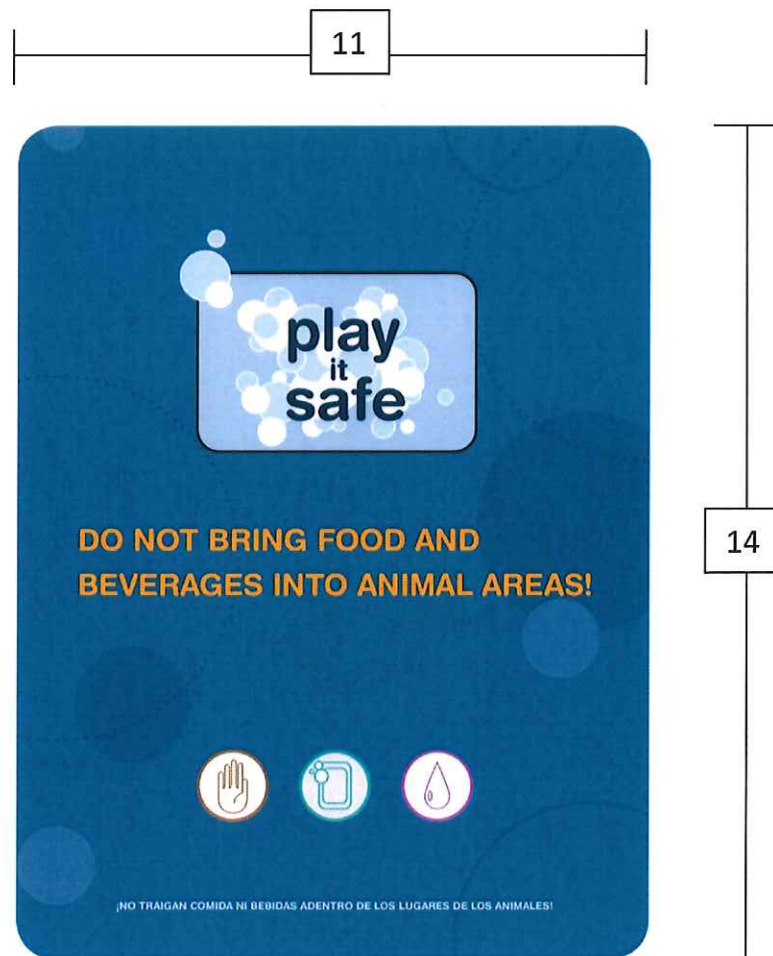
- **At the exits of the fairgrounds.**

This sign should be printed as size 11"x14" and posted at the exits of the fairgrounds where fair patrons will see them as they are exiting the grounds.

This sign can be found on the *Play It Safe* flash drive included in the tool kit.

- Play It Safe/Signage/Sign 3

Sign 4



This sign should be posted:

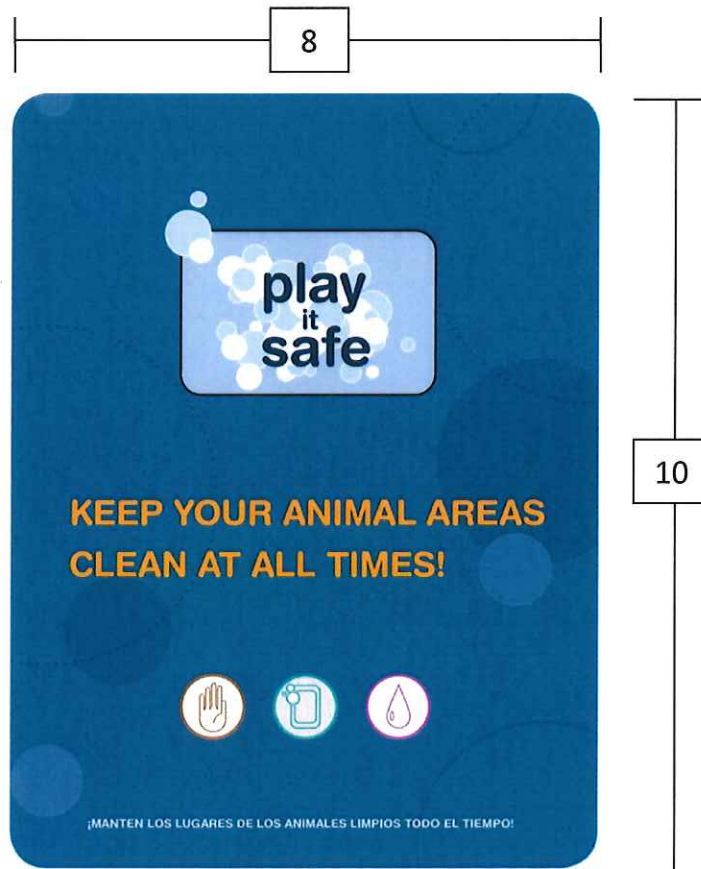
- **At the entrances of animal areas.**

This sign should be printed as size 11"x14" and should be posted at the entrance of all animal areas.

This sign can be found on the *Play It Safe* flash drive included in the tool kit.

- Play It Safe/Signage/Sign 4

Sign 5



This sign should be posted:

- **In areas where exhibitors house their animals.**
This sign should be printed as size 8"x10" and posted at the beginning of aisle-ways where exhibitors have animals.

This sign can be found on the *Play It Safe* flash drive included in the tool kit.

- Play It Safe/Signage/Sign 5

Sign 6



This sign should be posted:

- **At all food vendors on the fairgrounds.**

This sign should be printed on cardstock paper at 5"x7" so vendors can post it either in the window or near the register where it is visible, but doesn't take up too much space. This size also allows for the signs to be included in vendor packets.

This sign can be found on the *Play It Safe* flash drive included in the tool kit.

- Play It Safe/Signage/Sign 6

Sign 7



This sign should be posted:

- **At the entrances of animal areas.**

This sign should be printed as size 11"x14" and posted at the entrances of all animal areas along with sign 8.

This sign can be found on the *Play It Safe* flash drive included in the tool kit.

- Play It Safe/Signage/Sign 7



This sign should be posted:

- **At the entrances of animal areas.**

This sign should be printed as size 11"x14" and posted at the entrances of all animal areas along with sign 7.

This sign can be found on the *Play It Safe* flash drive included in the tool kit.

- Play It Safe/Signage/Sign 8

Sign 9



This sign should be posted:

- **Next to hand-washing stations.**

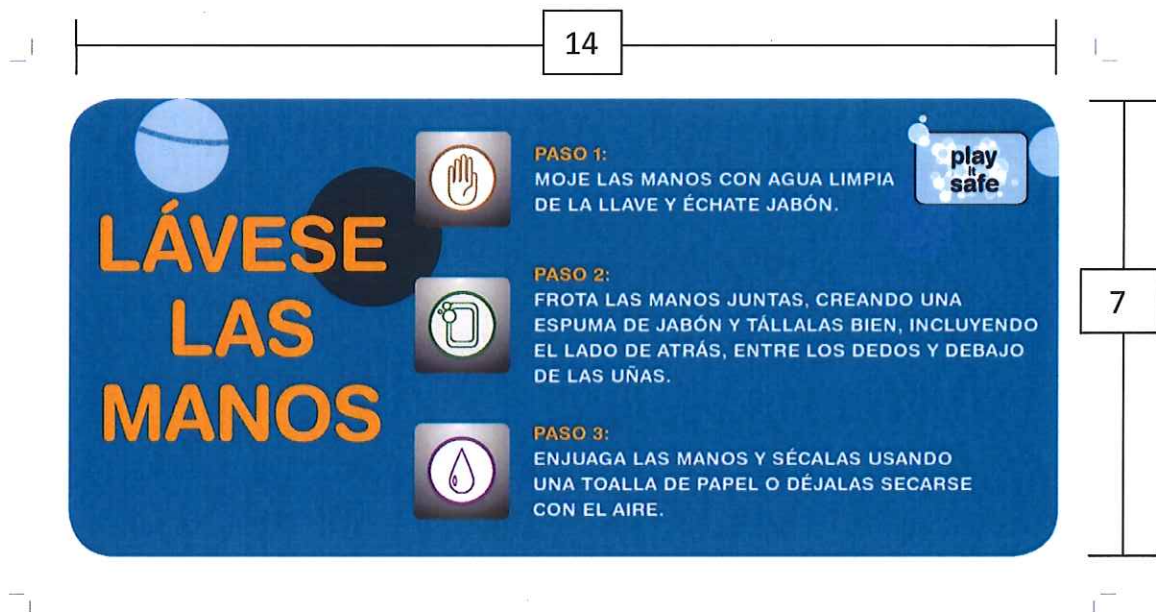
This sign should be printed as size 7"x14" landscape and posted next to all hand-washing stations. It should be visible at all heights, along with sign 10.

- **In all restrooms.**

This sign should be printed as size 7"x14" landscape and posted in all restrooms by the sinks.

This sign can be found on the *Play It Safe* flash drive included in the tool kit.

- Play It Safe/Signage/Sign 9



This sign should be posted:

- **Next to hand-washing stations.**

This sign should be printed as size 7"x14" landscape and posted next to all hand-washing stations. They should be visible at all heights, along with sign 9.

- **In all restrooms.**

This sign should be printed as size 7"x14" landscape and posted in all restrooms by the sinks.

This sign can be found on the *Play It Safe* flash drive included in the tool kit.

- Play It Safe/Signage/Sign 10

FOR MORE INFORMATION:

Compendium of Measures to Prevent Disease
Associated with Animals in Public Setting

<http://www.cdc.gov/mmwr/pdf/rrrr6004.pdf>

Centers for Disease Control (CDC)

<http://www.cdc.gov/ecoli/>

Washington State Department of Health

<http://www.doh.wa.gov/ehsphil/factsheet/ecoli.htm>

The *Play It Safe* campaign was produced in partnership with the California Department of Food and Agriculture's Division of Fairs and Expositions, Western Fairs Association and the California Fair Services Authority.

**play
it
safe**

Whether you're exhibiting prize-winning animals
or just admiring them from afar, preventing
animal-borne diseases begins with clean hands,
gear, and for exhibitors, clean surroundings.

For how-to tips, look inside!

REMEMBER THESE IMPORTANT TIPS:

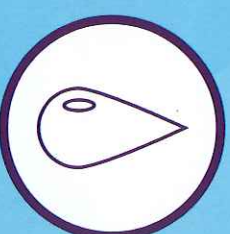
- Keep food and beverages out of animal areas.
- Toys, pacifiers, spill-proof cups and baby bottles can drop and become contaminated, so it's best to keep them put away in a sealed bag.
- Wipe off the wheels of any strollers or wagons brought into animal areas. The wheels have touched the ground and must be cleaned before being handled or loaded back into your vehicle.
- Don't allow children to sit or play on the ground in animal areas.
- If you see a child's hands are dirty, supervise/assist with proper hand washing.

IF YOU HAVE AN ANIMAL OF ANY KIND AT THE FAIR:

- Make sure animal feed/water are not accessible to the public.
- Promptly remove manure/soiled animal bedding from area.
- Store tools for waste removal in areas restricted from the public.
- Disinfect animal-area hard surfaces whenever possible.
- Do not use animal areas for public (non-animal) activities.
- Areas should be disinfected after animals are removed.

MOST IMPORTANT:

ALWAYS WASH YOUR HANDS BEFORE CONSUMING FOOD OR BEVERAGES!



Don't let an upset stomach be the souvenir you take home!



Insert a map of your
fairgrounds here.

Mark where all signs
are located.

Not only is it important to have a complete Health and Safety Policy, it is also important to have documented proof that your policy is being put into action.

Included in this section

Examples and blank forms for:

1. Pre-Event Protocol Check-List
2. Corrective Action Logs
3. End of the Fair Check-List

Take Action

Step 1:

- ☐ Fill out each action log with the appropriate information and days for your fair.

Step 2:

- ☐ Print the number of *Corrective Action Logs* necessary for each area and day of your fair.

Step 3:

- ☐ After logs are filled out each day, file them together by year and save. Do not throw any logs away because they are your proof of action.

EXAMPLE Pre-Event Protocol Check-List

	Procedure	Date & Time	Inspector's Name
Configuration	Verify that a Site Action Plan has been developed and is ready to implement.		
	Ensure proper event set up or configuration as per Site Action Plan.		
	Determine entry areas, exit areas and transition zones.		
	Establish waste management storage location, including equipment storage.		
	Create double barriers (as per Site Action Plan) to prevent incidental contact as needed.		
	Verify that hand washing stations are functional, including re-supplying with soap and disposable hand towels.		
	Verify that age appropriate hand washing stations are placed where needed.		
	Verify that age appropriate signage for adults and children is in place at entrance and exit areas.		
Cleaning	Verify that crates, panels and other equipment are cleaned and inspected for visual contaminants prior to set up.		
	Verify that a Waste Management Protocol is in place.		
Documentation	Take digital photos of layout, including entry and exit zones.		
	Verify that the Site Action Plan is up to date, including contact zones and corrective actions.		
	Have any certificates of staff training or animal health on file.		

EXAMPLE Corrective Action Log

Contact Zone:		Railings and Floors									
Location:		Livestock Pavilion									
Corrective Action:		Wipe railings with disinfectant & spray floor with disinfectant									
Frequency of Service:		Once per day									
Date	Day	Railing		Floor		Date	Day	Railings		Floor	
		Time	Initials	Time	Initials			Time	Initials	Time	Initials
/	1					/	8				
/	2					/	9				
/	3					/	10				
/	4					/	11				
/	5					/	12				
/	6					/	13				
/	7					/	14				

** Can remove days that are not needed. **

Corrective Action Log

Contact Zone:											
Location:											
Corrective Action:											
Frequency of Service:											
Date	Day	Time	Initials	Time	Initials	Date	Day	Time	Initials	Time	Initials
/	1					/	8				
/	2					/	9				
/	3					/	10				
/	4					/	11				
/	5					/	12				
/	6					/	13				
/	7					/	14				

EXAMPLE Corrective Action Log

Contact Zone:		Sanitizing Station						
Location:		Station #1 (LOCATION OF STATION)						
Corrective Action:		Clean and Re-Supply if needed						
Frequency of Service:		Throughout the day						
Date	Day	Served		Served		Day	Served	
		Time	Initials	Time	Initials		Time	Initials
/	1					8		
/	2					9		
/	3					10		
/	4					11		
/	5					12		
/	6					13		
/	7					14		

**Create a log for every hand-washing station and restroom on your fairgrounds. **

Process Verification Log - End of the Fair Check-List														
Forms	Date													
	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	Day													
	1	2	3	4	5	6	7	8	9	10	11	12	13	
Hand Sanitizing Station Forms (# of Stations)	Collected at the End of the Fair													
	Collected Daily													
Rail & Floor Sanitation Form														
Collected at the End of the Fair														
Pre-Event Form														
Post-Event Form														
Date:											Reviewed By:			
<div></div> <div>**Remove the days not needed.**</div>														

Other Suggestions

The following are various other suggestions to add to the current Play It Safe Campaign if you have or can find the resources to do so.

Hand Washing Demonstrations:

Reminding fair visitors to wash their hands is important, but we must also make sure they are doing it properly. Often many people are not fully washing their hands. This demonstration is also very important for the younger visitors.

FFA/4H Competition:

Get the FFA and 4H participants involved in a competition where the chapters can create signage and/or other educational displays about the importance of washing your hands. The information and rules for this competition can go out with fair paperwork that is already sent to those showing animals at the fair. This will not only help educate the livestock participants, but will also help educate the public. An example prize for this competition could be the chance to pick your pen area for the next year's fair.

Educational Demonstrations about Germs and Safety:

There are entertainment vendors whose acts teach health and safety to children. Germ demonstrations and presentations can be educational for children and their parents.

Example: Let's Pretend Entertainment-The Cutest Show On Earth!

Elisa Hays

Elisa@cutestshow.com

(253) 278-6410

Coloring Contest:

Using the *Play It Safe* logo and other hand-washing images, you can create a coloring contest for children.

Coloring Booklet for Children:

Using the *Play It Safe* logo and other hand-washing images, you can create a coloring book that teaches how to properly wash your hands and also contains the same information as in the *Play It Safe* brochure.

Stroller Parking Areas:

This idea actually came from amusement parks and is a great way to keep strollers out of the animal areas. Parents are forced to bring strollers due to the size of the fairgrounds, but they may be able to leave them while visiting the animal areas at your fair. You can decide whether or not this area should have an attendant with some kind of ticketing or identification system.

Stroller Wheel Washing Station:

If fair visitors do need to take their strollers into animal areas, you can provide an area for them to disinfect their stroller and wagon wheels near animal area exits.

Feet/Wheel Sanitation Mats:

Sanitation mats are a great way to sanitize the feet and wheels that exit animal areas. The mats are thin, black and hold a sanitizing solution that seeps through the material when stepped on.

Example: <http://www.gemplers.com/product/104/Disinfectant-Mats?>

Helpful Hint: This could be used in the designated stroller wheel washing station.

Reminder Announcements:

Announcements regarding hand-washing and good hygiene in English, Spanish and other languages, can be made throughout the day in livestock and over the entire grounds paging system.

Creating Stickers with the *Play It Safe* Logo:

Staff members or volunteers can pass out these stickers reminding children and parents to wash their hands.

Plastic Bag Dispenser:

It's recommended that fair visitors store toys, pacifiers, bottles and cups in a bag when entering animal areas. However, people do not always have these on

hand. Your fair can provide these bags in dispensers so that visitors can keep personal items from being contaminated.

Helpful Hint: See if a local grocery store will give you plastic bags as a donation since it would be strong publicity for them.